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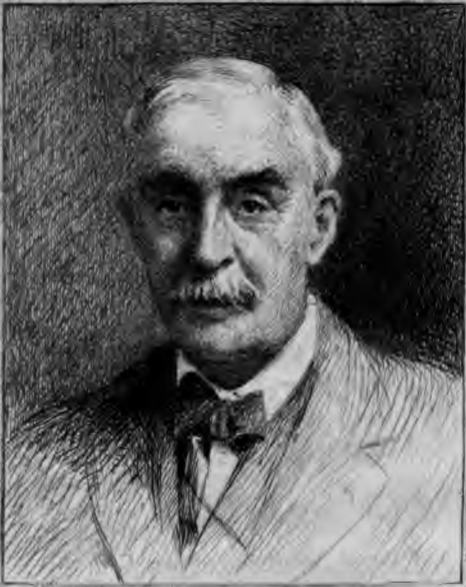

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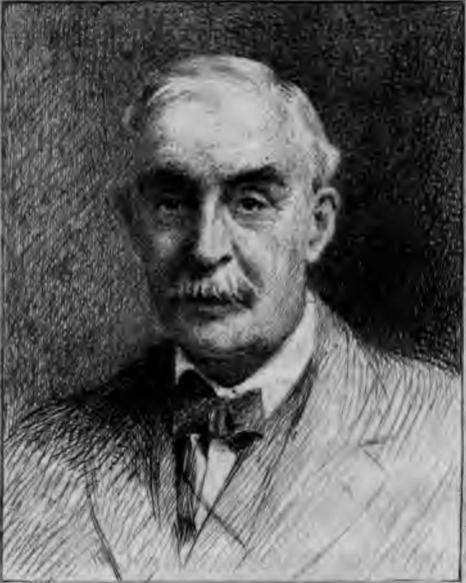

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OUTLINES

OF

LOGIC, PSYCHOLOGY, AND ETHICS

OUTLINES OF
LOGIC, PSYCHOLOGY AND ETHICS

BY

ARTHUR BAKER, M.A.
ASSISTANT MASTER, INDEPENDENT COLLEGE, TAUNTON

London
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PREFACE

The following pages do not lay claim to originality of thought, or even of language. But they cover the whole ground of the Mental and Moral Philosophy Course for the London University Pass B.A., and, in manuscript form, have been found useful by students preparing for that examination. In later years the questions on each branch of the course appear to have been set from a constantly enlarging circle of text-books; and the student who confines himself to one or two authorities, however excellent these may be, is sure to meet with many questions for which he is totally unprepared; while, if he extends the range of his reading, he is very likely to concentrate his attention on what is superfluous and, for his immediate purpose, without value.

In the present volume the Syllabus has been interpreted by the Examination Papers of the last five years, and answers to these (or, in the case of problems, materials for solution) have been incorporated in the text. The Papers themselves are printed with full references in the first Appendix, while the second Appendix contains a list of those authorities to whom the writer is specially indebted. The matter of the book has been thrown into the form of questions and answers, as being probably the most convenient arrangement for the student.

It is hoped that this work, though perhaps too condensed for an unaided beginner, may prove of use for purposes of revision, and, as a summary of current philosophical thought, may help the general reader to obtain a comprehensive view of the subjects of which it treats.

ARTHUR BAKER.

TAUNTON, *September* 1891.

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PART I.

LOGIC.

QUESTION 1. **What do you consider to be the sphere and scope of Logic? Distinguish it from kindred sciences.**

- *a.* LOGIC is the science of the conditions of correct thinking; its subject-matter is not the actual materials of our knowledge, but our mode of knowing them, the shape into which we put them.
- *b.* FORMAL LOGIC, as a branch of the larger science, deals with consistent thinking; it only inquires whether conclusions are consistent with the data, and not whether they accord with extraneous facts.
- *c.* PSYCHOLOGY, as contrasted with Logic,
  - (1) is wider than Logic: Psychology deals with Feeling and Willing as well as with Knowing;
  - (2) is more concerned with the history of knowing: Psychology describes the order in which knowledge comes to be, but Logic assumes the mental development to be complete;
  - (3) is more abstract than Logic: Psychology deals with processes, as Conception, Judgment, Reasoning; Logic deals with

the products of those processes, as concepts, judgments, reasonings;

(4) is only a science, and not an art as well: Psychology discusses how we actually do think, but Logic instructs us how we ought to think.

d. METAPHYSICS discusses how far we can speak of knowledge at all, and treats of the ultimate suppositions that underlie both Psychology and Logic. Thus, while Psychology deals with the content of knowledge and analyses experience, Metaphysics deals with the conditions of knowledge and transcends experience.

QUESTION 2. **Enumerate the more important classes of Terms, and indicate the logical value of the distinctions you make. What is meant by the Intension and Extension of a Term?**

a. Singular Terms denote an individual; general terms denote a class; collective terms denote a class taken as a whole. Thus *Plato's Republic* is singular, *book* is general, *library* is collective.

In a logical judgment terms are interpreted distributively, in a mathematical equation collectively. In a general judgment we often only develop what is already involved in the general term; in a singular judgment we must, as a rule, derive our knowledge from extraneous experience. (Q. 35 *a.*)

b. Positive Terms denote the presence of an attribute, and Negative Terms its absence. But both must be interpreted in reference to a common genus; thus, 'non-red' includes any colour which is not red, but does not include any properties except those of colour. For a 'non-red' that includes 'sweet,' 'triangular,' and so forth, is simply unthinkable.

c. Concrete Terms denote an object, and include all adjectives; abstract terms denote a quality or attribute.

An abstract term, being without connotation, only pernits of one judgment, viz. that it is the property of its corresponding concrete.

d. Connotative Terms denote a subject, and connote an attribute; non-connotative denote a subject only, or an attribute only. 'Connotation' only includes the attributes definitely implied in the name, and not those merely suggested by it; thus 'equilateral triangle' only connotes the attribute of equal sides, but not that of equal angles.

Proper Names, therefore, so far as they are merely arbitrary signs, have no connotation; abstract terms also have none, for 'whiteness' means no more than 'white'; singular terms, unless they are proper names, have the widest connotation that is possible in each case.

e. The Intension of a Term is the sum of the independent attributes which it connotes, the Extension is the sum of the objects which it denotes. As the intension is increased, the extension is decreased; 'Greek book,' for instance, connotes more attributes than 'book,' but denotes a numerically smaller class. A singular term, therefore, *e.g.* 'the earliest historical Greek book,' has the minimum of extension combined with the maximum of intension.

The attributes must, however, be independent; 'trilateral triangle' is as large a class as 'triangle,' because three-sidedness is part of the definition of 'triangle'; 'mortal men' is as large a class as 'men,' because mortality, though not part of the essential connotation of 'man,' has always been found to co-exist with 'man.'

QUESTION 3. **Enumerate the principal kinds of propositions, and explain what is meant by distribution of terms. Define the various kinds of opposition, and show how the four categoricals are related to each other.**

a. A proposition is any sentence or combination of words expressing a judgment. It is thus a comparison of two terms, and in its simplest form consists of a subject (S) and a predicate (P) connected by a copula. If the relation between S and P is absolute, the proposition is called categorical; if the relation is conditioned, the proposition is a hypothetical one.

b. There are four main kinds:

A. Universal Affirmative. S*a*P = All S is P.
I. Particular Affirmative. S*i*P = Some S is P.
E. Universal Negative. S*e*P = No S is P.
O. Particular Negative. S*o*P = Some S is not P.

Exclusive propositions are in the form, 'None but S is P,' or 'Only S is P.' If we denote non-S by S′ and non-P by P′, this form may be written S′*a*P′, which will be shown to be equivalent to P*a*S or 'All P is S.'

Exceptive propositions must be classed as particulars, unless they can be resolved into two separate propositions.

c. A term is distributed in a proposition when the whole of it is referred to.

Thus we have in

A.	S distributed,	P undistributed.
I.	S undistributed,	P undistributed.
E.	S distributed,	P distributed.
O.	S undistributed,	P distributed.

d. Two propositions are opposed when they have the same subject and predicate, but differ in quality (as affirmative and negative) or quantity (as universal and particular) or both. They may be opposed in four ways, as

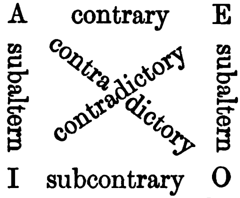
(1) Contradictory: if one is true the other is false, and *vice versâ.*

(2) Contrary: both cannot be true, but both may be false.

(3) Subcontrary: both may be true, but both cannot be false.

(4) Subaltern: the truth of the particular follows from that of the universal, but not *vice versâ.*

e. The relation between A, I, E, O may, therefore, be expressed as follows:



That is, If A is true or O false, then I is true and E is false.

If I is true or E false, then A is doubtful and O is doubtful.

If E is true or I false, then A is false and O is true.

If O is true or A false, then I is doubtful and E is doubtful.

QUESTION 4. **Enumerate the various forms of Immediate Inference, illustrating each from as many of the four categoricals as you can. What relation exists between each pair of the following propositions, S*a*P, P*o*S, S′*o*P, S*e*P′, P*i*S, P′*o*S, P*a*S ?**

a. Simple conversion; S*i*P = P*i*S, S*e*P = P*e*S. Conversion *per accidens*; S*a*P = P*i*S. But S*o*P, as it tells us nothing of P, has no converse.

b. Obversion; change quality of proposition and sign of predicate. This gives us S*a*P = S*e*P′, S*i*P = S*o*P′, S*e*P = S*a*P′, S*o*P = S*i*P′.

c. Contraposition; this is the conversion of the obverse; *e.g.* S*a*P = P′*e*S, S*e*P = P′*i*S, S*o*P = P′*i*S. But as O has no converse, I has no contrapositive.

d. Problems like that in the text are best solved by stating each given proposition in all its equivalent forms, and then comparing such forms as have the same subject and predicate in each case; if, however, a proposition is identical with a form of one already given, it may be left untouched. Thus we have the following list, weakened forms being enclosed in brackets:

α	β	γ	δ	ε	η
Original.	Obverse.	Contrapositive.	Obv. Contrap.	Converse.	Obv. Converse.
(1) S*a*P	S*e*P′	P′*e*S	P′*a*S′	(P*i*S)	(P*o*S′)
(2) P*o*S	P*i*S′	S′*i*P	S′*o*P′	None	None
(3) S′*o*P	S′*i*P′	P′*i*S′	P′*o*S	None	None
(4) S*e*P′					
(5) P*i*S	P*o*S′	None	None	S*i*P	S*o*P′
(6) P′*o*S					
(7) P*a*S	P*e*S′	S′*e*P	S′*a*P′	(S*i*P)	(S*o*P′)

Taking in each case the most convenient form, we find the relationship to be as follows:

1 and 2 have no relationship, but 2 (*a*) and the weakened form 1 (ε) are subcontraries.
1 (γ) and 3 (δ) are subalterns.
1 (*a*) and 5 (ε) are subalterns.
1 and 7 have no relationship, but 1 (*a*) and the weakened form 7 (ε) are subalterns.
2 (γ) and 3 (*a*) are subalterns.
2 (*a*) and 5 (*a*) are subcontraries.
2 (*a*) and 7 (*a*) are contradictories.
3 and 5 have no relationship.
3 (*a*) and 7 (γ) are subalterns.
4 is the obverse of 1, and is related to each of the others as 1.
5 (*a*) and 7 (*a*) are subalterns.
6 is the obverted contrapositive of 3, and is related to each of the others as 3.

QUESTION 5. **Enunciate the Primary Laws of Thought, and discuss, from a logical point of view, the import of propositions.**

a. The Laws of Thought are really laws of judgment, and are the basis of consistency in reasoning. Their own basis is explained in two ways (Q. 24):
  (1) Empirically. They apply universally to the whole of our experience.
  (2) Intuitionally. They are prior to actual thought, and are conditions under which the mind is bound to think, if it thinks at all.

The three main laws are:
  (1) The Law of Identity; all A is A. From this, for instance, we conclude that S*i*P follows from S*a*P, and P*i*S from S*i*P.

(2) The Law of Contradiction; no A is not A. Thus S*a*P = S*e*P′.

(3) The Law of Excluded Middle; all A is B or else not-B. Thus S*e*P = S*a*P′. But as not-B must stand for something that is really thinkable in connection with A (Q. 2 *b*), the law is better expressed: All A that is B, is either *b* or non-*b*, where *b* and non-*b* together exhaust B.

German logicians add the Law of Sufficient Reason; A + C = B. That is, A to become B must be conditioned by C.

b. Logically, propositions may be interpreted in intension (connotation) or extension (denotation). In intension, S*a*P means that the attributes of P are always found together with the attributes of S; in extension, S*a*P means that S is included in the class P. The two forms are always convertible; 'all oxen are four-footed' (intension), is equivalent to 'all oxen are quadrupeds' (extension).

The arguments for the Intension Theory are,

(1) In uttering a proposition, we do not form a mental image of two classes with distinct boundaries; if we express ourselves in extension, it is only because language is better adapted to express concrete objects than attributes. Even the subject is not primarily thought in extension; for when we say 'all oxen,' we do not mentally review all the oxen we have seen or heard of, but are merely thinking of the attributes of an ox.

(2) The Extension Theory confuses a general and a universal judgment. 'Man is

mortal' is general, and implies that all men are mortal by reason of being men; 'all men are mortal' is universal, and, as a mere statement of fact, is consistent with the explanation that the connection between man and mortality is a mere accidental coincidence in each case.

But most logicians would hold that we are always entitled to argue from either form to the other.

(3) The Extension Theory implies that the knowledge of a class is prior to the knowledge of an individual. But against this it is urged that

(*a*) We cannot help thinking 'red' and 'green' under a general notion 'colour,' and therefore an indeterminate notion of a class is really prior in thought to experience.

But, even if this be granted, we have an empirical knowledge of the individual, before we discover that we have an intuitive knowledge of the class.

(*β*) The knowledge of an individual only becomes definite, when the individual is referred to a class.

QUESTION 6. **What are the advantages and disadvantages of the Quantification of the Predicate? How does it lend itself to a diagrammatic representation of propositions?**

a. To quantify the predicate is to place a sign of quantity before it as well as the subject. Thus Sir William Hamilton proposed four new categoricals, viz.:

(1) U, All S is all P.
(2) Y, Some S is all P.
(3) η, No S is some P.
(4) ω, Some S is not some P.

b. The advantage of this scheme is that we can now convert and contraposit without any restriction; our propositions are assimilated to mathematical equations.

c. The objections to it are:

(1) We get rid of the advantage of keeping in line with ordinary language.

(2) We do not think in extension, but in intension; we think 'S is P' without caring to consider whether it is all or some P.

(3) We think propositions and not equations; 'All S is all P' may be true logically, where 'all' is distributive, without being true mathematically, where 'all' is collective.

(4) We think one proposition at a time; 'All S is all P' contains two propositions compressed into one formula.

(5) 'Some' is made to mean 'some, but not all,' instead of 'some, it may be all.' If the former view were correct, S*i*P would be the same proposition as S*o*P.

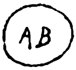
(6) Logic is made much more complex, and that without any necessity. For three of the new forms admit of easy expression in the ordinary scheme; thus,

(α) $SuP = SaP + PaS$.
(β) $SyP = PaS$.
(γ) $S\eta P = PoS$.

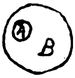
The fourth form $S\omega P$ is totally useless, being consistent with every other form of proposition, unless S and P are both singular terms.

d. Mr. Venn proposes a scheme which meets these objections by not claiming to supersede but only to supplement the ordinary logic, and which, being the only one that is really adapted to diagrammatic representation, forms the basis of Symbolic Logic. If we relegate the distinction between subject and predicate to Grammar, and interpret every proposition in extension, we find that two terms, A and B, can only be related in five ways, viz.:

(1)



(2)



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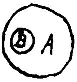

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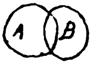
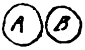


(5)



These may be read off: (1) All A = all B, (2) All A = some B, (3) Some A = all B, (4) Some A = some B, (5) No A = no B. But neither this nor any other scheme of diagrams can be made to fit in with the traditional Logic of Intension and unquantified predicate.

QUESTION 7. **Enumerate and explain the five predicables, illustrating each by the term 'man.' What are the principles of Classification ?**

a. A predicable is one of a fivefold division of terms grounded on a difference in the kind of class which they denote. These are

(1) Genus, any term regarded as forming a class, and subdivisible into two or more subordinate classes; 'man' is a genus in relation to 'European' and 'non-European.'

(2) Species, any class regarded as forming part of a larger class; 'man' is a species of the genus 'animal.'

(3) Difference, the sum of those essential attributes which any set of co-ordinate species have not in common, so that genus + difference = species. But the difference must be of the essence of the class in regard to the *fundamentum divisionis* or basis of division. Thus the difference of 'man' may be said to be 'rationality,' but to the naturalist it would be some physical characteristic.

(4) Property, any attribute necessarily predicated of a whole class and following from the difference

  (*a*) as effect from cause; *e.g.* 'capable of studying logic' is a property of 'man' because of his rationality;

  (*β*) or as conclusion from premiss; *e.g.* 'having any two sides greater than the third' is a property of 'triangle,' because it can be shown to follow from three-sidedness.

(5) Accident, an attribute which may or may not be predicated of a class, but is unconnected with the difference; it is inseparable if always found with the class, but otherwise is separable. Thus to the naturalist 'rationality' would be an inseparable accident of 'man.'

b. The rules of Classification or Division are:

(1) We must adhere in the main outline of any scheme to one *fundamentum*

divisionis; else there will be cross-division.

(2) This *fundamentum divisionis* should be based on the most important characteristics of the class—that is,

  (*a*) those which are most stable; *e.g.* we must not classify animals according to their colours;

  (β) those which are most fruitful, drawing with them most additional distinctions.

(3) We must descend gradually from the higher to the lower stages of a classification.

(4) We must exhaust the more important differences in the higher stages and go into fuller detail in the lower stages.

(5) The species of each genus must be mutually exclusive, and, taken together, must exhaust the genus.

(6) The species of each genus should be co-ordinated in the order of the intensity of their fundamental characteristic. Thus if we classified x^3, $2x$, $4x^4$, $7x^2$, on the basis of descending powers of x, we should arrange them as $4x^4$, x^3, $7x^2$, $2x$.

(7) Each class should be provided with a convenient type of that class; for though logically the class is determined by the sum of its attributes, in practice it is most easily remembered by a type. The most suitable type is one which

  (*a*) is equally removed from limiting instances of the class in either direction;

(β) indicates not only the fundamental characteristic of the series, but the form into which it tends to evolve.

QUESTION 8. **What are the rules of Definition? Illustrate your answer by a definition of 'man,' and discuss its completeness.**

a. A definition is a proposition declaratory of the meaning of a word. To be complete, it ought to give the whole connotation—that is, all the common qualities of the class denoted by the word which are mutually independent. In practice, however, we have to content ourselves with the essential connotation, and that depends on the *fundamentum divisionis.* A definition, then, takes the form of an equation giving the genus and difference of the term defined, subject to these rules:

(1) The definition and the term defined must be exactly co-extensive.

(2) The definition must not include in any form the term to be defined, or we have a *circulus in definiendo.*

(3) The terms of the definition must be mutually exclusive, or we have redundancy.

b. 'Man' may thus be defined as 'rational animal'; but this is incomplete, because

(1) If we define 'animal' and each higher genus similarly, we get a highest genus which cannot be defined in this way; and this defect may be held to vitiate all the subordinate operations.

But, though the definition of an ultimate term such as 'Substance' can only be effected by abstraction of its whole specific content, these terms are few in number and of no practical logical importance.

(2) We omit a large part of the connotation which cannot be deduced from rationality; *e.g.* biped, without tail, laughing.

(3) If we inserted all the connotation, we should have to be either constantly altering our definitions or putting a great strain on our language. Thus up to the present century a swan might have been defined as 'a white bird which, etc.,' but we now know that there are black swans, and we could hardly provide a separate word for them and refuse them the name of 'swans.' In fact, all non-scientific definitions are only provisional.

QUESTION 9. **In what sense is language (*a*) an aid (*b*) an obstruction to thought? What are the requisites of a philosophical language?**

a. Apart from its more general functions as a means of communication and of record, language is an aid to thought, because

(1) The name combines and registers in a fixed form a group of certain attributes, which would otherwise become disunited in thought when not attended to; it helps us to recall that group and to keep it distinct from other groups. 'Words are the fortresses of thought, enabling us to make real our dominion over that

which we have already overrun in thought; they are the arch of masonry that secures a tunnel, before we can make the finished part a basis for further operations.'

  - (2) The expansive power of language enables us to make transitions from objects already named to such as are unnamed.
  - (3) Words show the popular connection between different objects, which we might otherwise have neglected to observe.

b. But it is also an obstruction to thought, because

  - (1) The popular connection thus embodied in words is often inaccurate, and yet almost impossible to eradicate.
  - (2) The meaning of words insensibly shifts, either accidentally or because experience has added other attributes to a given group; yet the word itself remains the same, and is thus capable of more than one interpretation.
  - (3) We are apt to read into the meaning of words specific peculiarities which are not common to the whole genus denoted by the term.

c. The requisites of a philosophical language are, therefore,

  - (1) the terms must be precise, and their meaning, or connotation, definitely fixed;
  - (2) they should correspond to groups of attributes that form natural, as opposed to arbitrary, species and genera;
  - (3) they should, by their form, suggest the main characteristics of the groups of

attributes which they connote, as is especially the case in the language of Chemistry.

QUESTION 10. **State the more important rules of the Syllogism, and prove any general corollaries that result from them. Show by elimination that there are only eleven valid moods, and give a reason in each case for rejecting the invalid ones.**

a. In a syllogism we compare two propositions, called premisses, so that a third results. The term common to both the premisses is called the middle term (M), the predicate of the conclusion is the major term (P), the subject of the conclusion is the minor term (S). The major premiss is that which contains P; the minor is that which contains S. The four principal rules, a breach of which would involve a breach of the Laws of Thought, are

(1) The middle term must be distributed once at least.

(2) No term must be distributed in the conclusion which was not distributed in the premisses. A breach of this rule, in reference to P is called illicit process of the major; in reference to S, illicit process of the minor.

(3) Two negative premisses yield no conclusion.

(4) If one premiss is negative, the conclusion is negative; if the conclusion is negative, one premiss is negative.

b. From these rules we may deduce the following corollaries:

(5) At least one more term must be distributed

in the premisses than in the conclusion. For the premisses must distribute M as well as any term which is distributed in the conclusion.

(6) From two particulars, no conclusion can be drawn. For the possible forms are
  (a) IIA, III, IIE, IIO : breach of rule 1.
  (β) OOA, OOI, OOE, OOO : breach of rule 3.
  (γ) IOA, IOI, OIA, OII : breach of rule 4.
  (δ) IOE, IOO, OIE, OIO : breach of rule 5.

(7) If one premiss is particular, the conclusion is particular. For the other possible forms are
  (a) IAA, IAE, AIA, AIE : breach of rule 5.
  (β) OAA, AOA, IEA, EIA : breach of rule 4.
  (γ) OAE, AOE, IEE, EIE : breach of rule 5.
  (δ) OEA, OEE, EOA, EOE : breach of rule 3.

(8) A particular major and a negative minor yield no conclusion. For if the premisses are IO, they break rule 6; if OE or OO, they break rule 3; if IE, the whole syllogism may be either IEA or IEI (both breaches of rule 4), or IEE (breach of rule 5), or IEO which distributes P in the conclusion, but does not do so in major premiss, and therefore breaks rule 2.

(9) If we know that only one term is distributed in the premisses, then that term must be M and the conclusion must be I.

If we know this of two terms, then either S or P is distributed, but not both, and (unless we use two A's to prove an I) the conclusion must be A or O.

If we know this of all three terms, then both

S and P are distributed and (unless we use an A and an E to prove an O) the conclusion must be E.

c. Three propositions give sixty-four combinations; the invalid ones have opposite to them the number of one of the rules that they break. They are

AAA	IAA (7)	EAA (4)	OAA (4)
AAI	IAI	EAI (4)	OAI (4)
AAE (4)	IAE (4)	EAE	OAE (7)
AAO (4)	IAO (4)	EAO	OAO
AIA (7)	IIA (6)	EIA (4)	OIA (6)
AII	III (6)	EII (4)	OII (6)
AIE (4)	IIE (6)	EIE (7)	OIE (6)
AIO (4)	IIO (6)	EIO	OIO (6)
AEA (4)	IEA (4)	EEA (3)	OEA (3)
AEI (4)	IEI (4)	EEI (3)	OEI (3)
AEE	IEE (7)	EEE (3)	OEE (3)
AEO	IEO (8)	EEO (3)	OEO (3)
AOA (4)	IOA (6)	EOA (3)	OOA (3)
AOI (4)	IOI (6)	EOI (3)	OOI (3)
AOE (7)	IOE (6)	EOE (3)	OOE (3)
AOO	IOO (6)	EOO (3)	OOO (3)

QUESTION 11. **Draw up a scheme of the Figures of the Syllogism. Write down all the syllogistic forms corresponding to the eleven moods; after the valid ones place their names, after the invalid ones the fallacy involved in them. What value would you assign to each figure, especially the fourth?**

a. There are four figures, viz.:

M-P	P-M	M-P	P-M
S-M	S-M	M-S	M-S
S-P	S-P	S-P	S-P
Fig. 1.	Fig. 2.	Fig. 3.	Fig. 4.

b. The eleven moods, therefore, give us forty-four combinations, viz.:

M*a*P S*a*M S*a*P	Barbara	P*a*M S*a*M S*a*P	Undist. Middle.	M*a*P M*a*S S*a*P	Illicit Minor	P*a*M M*a*S S*a*P	Illicit Minor
M*a*P S*a*M S*i*P	Weakened Barbara	P*a*M S*a*M S*i*P	Undist. Middle	M*a*P M*a*S S*i*P	Darapti	P*a*M M*a*S S*i*P	Bramantip
M*a*P S*e*M S*e*P	Illicit Major	P*a*M S*e*M S*e*P	Camestres	M*a*P M*e*S S*e*P	Illicit Major	P*a*M M*e*S S*e*P	Camenes
M*a*P S*e*M S*o*P	Illicit Major	P*a*M S*e*M S*o*P	Weakened Camestres	M*a*P M*e*S S*o*P	Illicit Major	P*a*M M*e*S S*o*P	Weakened Camenes
M*a*P S*i*M S*i*P	Darii	P*a*M S*i*M S*i*P	Undist. Middle	M*a*P M*i*S S*i*P	Datisi	P*a*M M*i*S S*i*P	Undist. Middle
M*a*P S*o*M S*o*P	Illicit Major	P*a*M S*o*M S*o*P	Baroko	M*a*P M*o*S S*o*P	Illicit Major	P*a*M M*o*S S*o*P	Undist. Middle
M*e*P S*a*M S*e*P	Celarent	P*e*M S*a*M S*e*P	Cesare	M*e*P M*a*S S*e*P	Illicit Minor	P*e*M M*a*S S*e*P	Illicit Minor
M*e*P S*a*M S*o*P	Weakened Celarent	P*e*M S*a*M S*o*P	Weakened Cesare	M*e*P M*a*S S*o*P	Felapton	P*e*M M*a*S S*o*P	Fesapo
M*e*P S*i*M S*o*P	Ferio	P*e*M S*i*M S*o*P	Festino	M*e*P M*i*S S*o*P	Ferison	P*e*M M*i*S S*o*P	Fresison
M*i*P S*a*M S*i*P	Undist. Middle	P*i*M S*a*M S*i*P	Undist. Middle	M*i*P M*a*S S*i*P	Disamis	P*i*M M*a*S S*i*P	Dimaris
M*o*P S*a*M S*o*P	Undist. Middle	P*o*M S*a*M S*o*P	Illicit Major	M*o*P M*a*S S*o*P	Bokardo	P*o*M M*a*S S*o*P	Illicit Major

[The student may test his grasp of the reasoning involved in this list by giving a *general* answer to such questions as the following: Why does the second figure yield only a negative conclusion, and the third only a particular? Why does an O major only yield one mood? Why is AAA only valid in one figure? Why is AEO apparently never valid? Why is EIO valid in all figures? Why with an E premiss is there never an Undistributed Middle? Why with an I conclusion is there never an Illicit Process?]

c. The value of the four figures is as follows:

- (1) The first proves all four categoricals, and is thus the most useful; and it is the only one for proving A, which is the principal conclusion required in any science.
- (2) The second proves negatives, and is thus best adapted for disproof.
- (3) The third proves particulars, and is best adapted for the refutation of a general proposition. Thus to refute S*a*P, we must prove S*o*P; to refute S*e*P, we must prove S*i*P.
- (4) The fourth has been disparaged as merely establishing the converse of the first; but the O's which it establishes cannot be the converse of anything at all. Fesapo and Fresison, however, are easily reducible to Ferio; and from the premisses of Bramantip, the fuller conclusion is P*a*S, and not merely S*i*P.

QUESTION 12. **State what you consider to be the basis of syllogistic reasoning, and illustrate your answer by giving examples of Reduction. Discuss Mill's view of the value and function of the Syllogism.**

a. We need only find a basis for the first figure, since all the others are reducible to it. Thus,

Cesare	= *Celarent*	*Bramantip*	= (*Weakened*) *Barbara*
P*e*M	M*e*P	P*a*M	M*a*S
S*a*M	S*a*M	M*a*S	P*a*M
S*e*P	S*e*P	S*i*P	P*a*S = S*i*P

$$\begin{array}{ccccccc} \textit{Baroko} & = & \textit{Ferio} & \qquad & \textit{Bokardo} & = & \textit{Darii} \\ \left.\begin{array}{l}\mathrm{P}a\mathrm{M}\\ \mathrm{S}o\mathrm{M}\\ \mathrm{S}o\mathrm{P}\end{array}\right\} & & \left\{\begin{array}{l}\mathrm{M}'e\mathrm{P}\\ \mathrm{S}i\mathrm{M}'\\ \mathrm{S}o\mathrm{P}\end{array}\right. & & \left.\begin{array}{l}\mathrm{M}o\mathrm{P}\\ \mathrm{M}a\mathrm{S}\\ \mathrm{S}o\mathrm{P}\end{array}\right\} & & \left\{\begin{array}{l}\mathrm{M}a\mathrm{S}\\ \mathrm{P}'i\mathrm{M}\\ \mathrm{P}'i\mathrm{S}=\mathrm{S}o\mathrm{P}\end{array}\right. \end{array}$$

Baroko and Bokardo, the only two forms which for direct proof require the use of negative terms, may also be proved positively, but indirectly. For

(1) Baroko. If S*o*P is not true, then S*a*P is. But P*a*M and S*a*P give us S*a*M, which is the contradictory of the original minor.

(2) Bokardo. Here S*a*P and M*a*S give us M*a*P, which is the contradictory of the original major.

b. In the first figure it would be enough to find a basis for the positive moods, as the negative ones are equivalent to them. Thus, by obverting the major and the conclusion, we have

$$\begin{array}{ccccccc} \textit{Barbara} & = & \textit{Celarent} & \qquad & \textit{Darii} & = & \textit{Ferio} \\ \left.\begin{array}{l}\mathrm{M}a\mathrm{P}\\ \mathrm{S}a\mathrm{M}\\ \mathrm{S}a\mathrm{P}\end{array}\right\} & & \left\{\begin{array}{l}\mathrm{M}e\mathrm{P}'\\ \mathrm{S}a\mathrm{M}\\ \mathrm{S}e\mathrm{P}'\end{array}\right. & & \left.\begin{array}{l}\mathrm{M}a\mathrm{P}\\ \mathrm{S}i\mathrm{M}\\ \mathrm{S}i\mathrm{P}\end{array}\right\} & & \left\{\begin{array}{l}\mathrm{M}e\mathrm{P}'\\ \mathrm{S}i\mathrm{M}\\ \mathrm{S}o\mathrm{P}'\end{array}\right. \end{array}$$

Barbara can therefore be proved indirectly by all the moods which yield an E conclusion.

But it can also be shown to follow from Darii, and therefore from Ferio and from all the moods reducible to either of these.

For if S*a*P is not true, then S*o*P is. But S*o*P = S*i*P′ = P′*i*S. This with our original minor gives us a syllogism in Darii, viz. S*a*M, P′*i*S, P′*i*M. But P′*i*M = M*i*P′ = M*o*P, which is the contradictory of the original major.

c. The Aristotelian 'Dictum de Omni et Nullo,' leaving negative terms out of account, provides for all four moods of the first figure, and may be thus expressed: 'Whatever can be predicated of a term as a whole, affirmatively or negatively, can similarly be predicated of all contained in it.' To avoid the necessity for reduction, we might similarly enunciate independent dicta for the other figures, also resting on the validity of the Laws of Thought. Thus the dictum for the second figure would run: If an attribute can be predicated affirmatively or negatively of every member of a class, then a subject of which it cannot be so predicated does not belong to that class.'

d. Mill's criticism of syllogistic reasoning is twofold:

- (1) It cannot lead to new truths, because it involves a *petitio principii* or begging of the question. If we argue in Barbara, 'All men are mortal, Socrates is a man, Therefore Socrates is mortal,' we are not justified in saying, 'All men are mortal,' unless we already know that Socrates is mortal. Syllogism, therefore, consists in putting a thing into a class and then finding it there. Against this view it is urged that
  - (*a*) The conclusion renders explicit what in the premisses was only implicit. At the time when we say, 'Socrates is a man,' we may not be attending to the fact that mortality is an attribute of man; and this is the more common, because in actual reasoning we usually put the minor first.

(β) *Petitio principii* would mean the reassertion of one premiss; syllogism combines two.

(γ) In scientific method our major is often an avowed hypothesis which we test by means of the minor to see if the conclusion corresponds with actual fact.

(2) It is not the form in which we often do reason. The burnt child dreads the fire, not because he puts his experience into the general proposition, 'Fire burns,' but simply because he has been burnt once; he reasons from particulars to particulars.

The answer to this argument is that such reasoning is not reasoning proper, but mere unreflective association, which only finds its logical justification by being thrown into syllogistic form; if we argue from one case of a group to any like case of the same group, we can only prove our position by showing that from the first case we might infer every case, and so from the general proposition deduce the second case.

Hence the special value of the syllogism lies in that

(1) Generally, it is a form to which all reasoning may be reduced so as to admit of being readily tested.

(2) Specifically, it is the form in which we test scientific hypothesis; and its special function is the right interpretation of general propositions.

QUESTION 13. **How far can we have a syllogism of (*a*) modal, (*b*) numerically definite, (*c*) relative propositions? What is an Enthymeme, an Epicheirema, a Sorites? Reduce each kind of Sorites to syllogistic form, and give its special rules.**

a. A modal proposition is one that qualifies the copula so as to express degrees of certainty or doubt. Thus from 'All M are P,' and 'S is probably M,' we conclude 'S is probably P'; but from two probable premisses we only get a possible conclusion.

b. A numerically definite proposition is one that particularises the quantity of I or O. Thus from 'Most M is P,' and 'Most M is S,' we conclude 'Some S is P'; and this will be true whenever the sum of the two fractions of M exceeds unity, though either of them be less than half. But this reasoning only holds good in the third figure.

c. A relative proposition is one that substitutes a relation for the copula, and it can only be syllogistically expressed by assuming a property of the relation in the major. Thus to prove, 'Because A is equal to B, and B to C, therefore A is equal to C,' we should have to argue in Barbara:

> Things equal to the same thing are equal to one another,
> A and C are things equal to the same thing,
> Therefore A and C are equal to one another.

d. An enthymeme is an incompletely stated syllogism. It is of the first order, if we suppress the

major; of the second, if we suppress
of the third, if we suppress the conc
A prosyllogism furnishes the concl
becomes one of the premisses of an
An epicheirema is an episyllogis
thymeme for its prosyllogism.

e. The Sorites is a chain of prosyllogi
logisms with all the conclusions
the last. In the ordinary Sori
the conclusion is the subject
position; in the Goclenian So
of the conclusion is the pr
proposition. Thus, in the
pressed conclusion is the
syllogism; in the Goclenian
would therefore be express

Ordinary	*Syllogistically*
SaM^1	(1) M^1aM^2 SaM^1 SaM^2
M^1aM^2	
M^2aM^3	(2) M^2aM^3 SaM^2 SaM^3
M^3aP	
SaP	(3) M^3aP SaM^3 SaP

f. In the ordinary Sorites
(1) There can only
For if there
make the
syllogism m
conclusions
these con
the seco

ses.
being D.
being D:
being D,
ing D.
of A being B.
A being B is the
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logism that would yield no conclusion and so break the chain.

(2) This negative premiss can only be the final premiss. For the final conclusion, being negative, distributes P; therefore P must be distributed in its premiss, which is the last; but P can only be distributed in a negative proposition; therefore the last premiss is negative.

(3) There can only be one particular premiss. For if there were two, we should somewhere in the chain have a syllogism with two particular premisses.

(4) This particular premiss can only be the first. For if $M^2 i M^3$ were a premiss, then in $M^2 i M^3$, $S a M^2$, we have an undistributed Middle.

Similarly it may be shown that in the Goclenian Sorites there can only be one negative premiss, which must be the first, and only one particular premiss, which must be the last. Hence in neither Sorites can we have an O premiss at all, but in each we may get an O conclusion from a final syllogism in Ferio.

QUESTION 14. **Illustrate the various forms of the hypothetical syllogism, disjunctive syllogism and dilemma. Show the relation of the first two to each other and to the categorical syllogism.**

a. Hypothetical propositions are such as contain a qualification restricting their application, and are either conditional or disjunctive. They are really identical with categoricals, and the categorical laws of opposition and syllogism hold good; thus they are A, I, E or O, according as, if A is B, C is always, sometimes, never or sometimes not D.

In the hypothetical syllogism the minor premiss is categorical, and we have two moods:

(1) Constructive (*modus ponens*); *e.g.*

If A is B, C is D: But A is B: Therefore C is D.

(2) Destructive (*modus tollens*); *e.g.*

If A is B, C is D: But C is not D: Therefore A is not B.

These two correspond to Barbara and Camestres, for the first is equivalent to

The case of A being B is the case of C being D,
This case is the case of A being B,
Therefore this case is the case of C being D;

and the second is equivalent to

The case of A being B is the case of C being D,
This case is not the case of C being D,
Therefore this case is not the case of A being B.

But we cannot argue

If A is B, C is D	The case of A being B is the case of C being D,
But C is D,	This case is the case of C being D,
Therefore A is B,	Therefore this case is the case of A being B,

for we should thus have an undistributed middle and commit the fallacy of affirming the consequent.

And we cannot argue

If A is B, C is D,	The case of A being B is the case of C being D,
But A is not B,	This case is not the case of A being B,
Therefore C is not D,	Therefore this case is not the case of C being D,

for we should thus have an illicit process of the major term and commit the fallacy of denying the antecedent.

In other words, since owing to the plurality of causes different antecedents may yield the same consequent, the only valid forms of hypothetical syllogism are by affirming the antecedent and denying the consequent.

The two valid moods, however, may, like Barbara and Celarent (Q. 12 *b*), be shown to be equivalent to each other by the use of negative terms. For

Modus ponens.	*Modus tollens.*
If A is B, C is D,	If C is not D, A is not-B,
But A is B,	But A is not not-B,
Therefore C is D.	Therefore C is not not-D (*i.e.* is D).

b. In the disjunctive syllogism one premiss is disjunctive, the word *or* connecting mutually exclusive terms, while the other premiss and the conclusion are categorical; but this syllogism is equivalent to the hypothetical and therefore to the categorical. There are two moods:

(1) *Modus tollendo ponens,* equivalent to the Constructive Hypothetical,

Disjunctive.	*Hypothetical.*
A is B or C,	If A is not B, A is C,
But A is not B,	But A is not B,
Therefore A is C.	Therefore A is C.

(2) *Modus ponendo tollens*, equivalent to the Destructive Hypothetical.

Disjunctive.	*Hypothetical.*
A is B or C,	If A is C, A is not-B,
But A is B,	But A is not not-B,
Therefore A is not C.	Therefore A is not C.

c. The dilemma is a syllogism with a conditional major which has more than one antecedent [or consequent or both] and a disjunctive minor. If we omit the bracketed part of this definition, the third form of dilemma, which is really a combination of two Hypothetical Destructives, disappears; otherwise we have four forms which correspond to the two forms of the hypothetical syllogism, viz.

(1) Simple Constructive Dilemma; *e.g.*
If A is B, C is D: if E is F, C is D:
But either A is B, or E is F,
Therefore C is D.

(2) Complex Constructive Dilemma; *e.g.*
If A is B, C is D: if E is F, G is H:
But either A is B, or E is F,
Therefore either C is D, or G is H.

(3) Simple Destructive Dilemma; *e.g.*
If A is B, C is D: if A is B, E is F:
But either C is not D, or E is not F,
Therefore A is not B.

(4) Complex Destructive Dilemma; *e.g.*
If A is B, C is D: if E is F, G is H:
But either C is not D, or G is not H,
Therefore either A is not B, or E is not F.

QUESTION 15. **How would you classify fallacies? Give examples where required.**

a. Fallacies specially incident to Deduction,

(1) Purely formal and independent of the matter of the argument or even the truth of the conclusion; *e.g.* a breach of any of the rules of the syllogism.

(2) Semilogical, where the matter of the argument as well as the form has to be considered. The chief of these are

(*a*) Equivocation, where one term, usually the middle, is ambiguous.

(*β*) Amphibology, where the grammatical structure is ambiguous; *e.g.* 'Aio te, Aeacida, Romanos vincere posse.'

(*γ*) Composition, where the middle term is distributive in the major and collective in the minor; *e.g.*

Seven and two are odd and even,
Nine is seven and two,
Therefore nine is odd and even.

(*δ*) Division, where the middle term is collective in the major and distributive in the minor; *e.g.*

All the angles of a triangle are equal to two right angles,
This angle is an angle of a triangle,
Therefore this angle is equal to two right angles.

b. Fallacies specially incident to Induction. These are discussed in Q. 22.

c. Material Fallacies, depending not on the form of the argument but on the matter. The chief of these are

(1) Fallacy of Accident, or *A dicto simpliciter ad dictum secundum quid,* wrong inference from a general to a special case; *e.g.* What you buy in the morning you eat at dinner, You buy raw meat in the morning, Therefore you eat raw meat at dinner.

(2) Converse Fallacy of Accident, or *A dicto secundum quid ad dictum simpliciter,* wrong inference from a special to a general case; *e.g.* Wine in excess is harmful, Therefore wine is harmful.

(3) Fallacy of Irrelevant Conclusion, or *Ignoratio elenchi,* when the required thing is not proved but something else instead; *e.g.* the *argumentum ad hominem.*

(4) Begging the Question, or *Petitio principii,* or *Circulus in probando,* when the conclusion is itself a premiss or needed to prove one of the premisses.

(5) Fallacy of the Consequent, or *Non sequitur,* when the conclusion obviously does not follow; but this fallacy may always be reduced to some other form.

QUESTION 16. **Distinguish between Induction per enumerationem simplicem and Induction proper, representing each syllogistically. State the postulates involved in the latter, and the basis on which they rest.**

a. Induction is the process whereby we infer that what holds good in a certain number of cases will hold good in any similar case. When this is the whole process, it is called Induction *per enumerationem simplicem,* and the result is an induction of coexistence; when, however, we know not only that a law does hold good, but have also some evidence to show why it holds good, the process is called Induction proper, and the result is an induction of causation.

b. Induction *per enumerationem simplicem* may, therefore, be syllogistically represented as follows:

Whatever is true of A, B, C, D, . . ., is true of all men,
Being a biped is true of A, B, C, D, . . .,
Therefore, being a biped is true of all men.

The validity of such an induction depends on

(1) the number of instances that we have observed;
(2) the likelihood of our knowing any to the contrary, if such exist.

c. Induction proper argues that because certain antecedents have hitherto been always followed by certain consequents, the antecedents are the cause of which the consequents are the effect, and will always produce that effect.

The postulates here involved are

(1) The law of universal causation, viz. that nothing happens without a cause; for if we meet with a change in the con-

sequents, we at once infer a change in the antecedents. The basis of this law is discussed in Qq. 24, 40.

(2) The Law of the Uniformity of Nature, viz. that the same cause will always produce the same effect. This law itself rests on an induction *per enumerationem simplicem,* but one of great strength, because confirmed by the whole of human experience, which on this point could hardly be more ample. And as every result of Induction depends on this law, to reverse it would mean the reversal of nearly every other law; similarly, the rejection on general grounds of any particular induction means the denial of this law.

d. Hence an induction of causation is attained by two syllogisms, to which these postulates furnish the major premiss:

(1) The only constant antecedent of B is the cause of B,
A is the only constant antecedent of B,
Therefore A is the cause of B.

(2) Given causes will always produce the same effect,
A is a given cause,
Therefore A will always produce the same effect (which is B).

Question 17. **Explain the antithesis between Induction and Deduction. What is the function of Deduction in Induction, and of Induction in Deduction?**

a. Deduction is reasoning down from a general proposition, *notiora naturae,* to particular instances, *notiora nobis*; Induction is reasoning up from particular instances to a general proposition.

Deduction follows the Method of Instruction, *e.g.* from the given rules of the Latin Grammar to write a correct Latin sentence; Induction follows the Method of Discovery, *e.g.* from the given sentences of the Behistûn Inscription to discover the rules of the language.

Deduction is a form of *a priori* proof, as Euclid builds up geometry from certain elementary axioms; Induction is a form of *a posteriori* proof, as when, in the case of a geometrical problem, we suppose it done, and reason back to the general principles from which we must start in order to do it.

Deduction is a process of analysis, for we break up a general proposition into particular facts; Induction is a process of synthesis, for we combine particular facts into a general proposition. Jevons, however, reverses this relationship, arguing that in Induction we break up, or analyse, experience into particular facts; but this is only a subsidiary operation of the whole process.

b. Ancient thought, taking its *a priori* principles haphazard (*e.g.* Nature abhors a vacuum), based science on deductions from these; the Baconian reaction based it on almost equally haphazard inductions from experience. Jevons represents a counter-reaction, holding that Induction is only inverse Deduction; Induction is making a maze or a cypher, Deduction is getting out of the maze, or deciphering; Induction is multiplying or quintupling, Deduction is dividing or finding the fifth root.

But, on the whole, modern thought would assign the pre-eminence to Induction, as leading to truths entirely new, while Deduction only combines truths already gained. In the Deductive Method (Q. 23) both processes find a place, and in ordinary reasoning we continually pass from one to the other in the course of one proof.

c. Deduction is a requisite element in all Induction, for

(1) Only by knowing how a law develops into facts can we judge how to collect facts that will develop into a law.

(2) When our law is thus obtained, it is of no practical use unless we employ Deduction to infer particular instances from it.

d. Induction is a requisite element in all Deduction, for our premisses must ultimately rest on Induction.

QUESTION 18. **Distinguish Induction Proper from Perfect Induction, Colligation of Facts, Geometrical Reasoning, Mathematical Induction, Analogy.**

a. Perfect Induction is a complete induction *per enumerationem simplicem*; *e.g.* knowing that each month of the year contains less than thirty-two days, we can generalise our knowledge in the proposition that all the months of the year contain less than thirty-two days.

But as all induction is inference from the known to the unknown, this process is not an induction, but merely a re-statement of the premisses in the conclusion.

b. The same criticism applies to Colligation of

Facts, a less complete form of Perfect Induction, as when a man sails round an island and combines his separate observations in one map, or when Kepler found the orbit of Mars by testing it at various points.

c. Geometrical Reasoning is the process whereby, *e.g.* in Euclid I. 5, we prove of a certain isosceles triangle that the angles at the base are equal, and infer the same quality of all isosceles triangles.

But here the argument consists of two stages, neither of which is an induction proper; the first is an assertion that similarly this quality may, by deduction, be proved to belong to other isosceles triangles; the second is an induction *per enumerationem simplicem* which asserts of all isosceles triangles the quality which, by deduction, we know to belong to some of them.

d. Mathematical Induction is the process whereby, after showing by trial that a relation holds good in the first term of a series, and also by deduction that if it holds good of any term, it also holds good of the next, we conclude that it holds good generally.

But this process is not an induction, but a series of syllogisms, each of which depends on the major premiss that what is true of one term is true of the next.

e. Analogy is the process whereby, from the number of qualities common to two instances or sets of instances, we conclude that some other quality of either will be possessed by the other, provided that

(1) there is no evidence tending to establish or disprove a causal connection between

the quality in question and any quality that is common or not common to the two instances, *i.e.* any point of resemblance or difference;

(2) we only reckon groups of causally connected qualities as single points of resemblance or difference.

The probability of our conclusion will then depend on

(1) the numerical ratio of the ascertained points of resemblance and difference to the sum-total of points of resemblance and difference; if we only know about our instances very little of what is to be known about them, the conclusion is invalid;

(2) the numerical ratio of the ascertained points of resemblance to the ascertained points of difference; in proportion as the former exceed the latter, the conclusion is strengthened.

The argument from analogy is, therefore, neither an induction *per enumerationem simplicem* nor an induction proper; for it does not argue from the number or character of the instances in which one common quality is found, but from the number of common qualities found in two instances. The chief value of analogy lies in the fact that it suggests applications of true inductive methods.

QUESTION 19. **Distinguish between Observation and Experiment, giving the advantages of each. By what rules should they be guided?**

a. In Observation the circumstances amidst which a phenomenon appears are found varied; in Experiment we make them varied. Thus in the study of Astronomy we watch, but cannot control, the motions of the planets; but in the study of Chemistry we can introduce at pleasure a new phenomenon into a group already known.

b. The advantages of Observation are that it is the only process whereby
  (1) we can study such sciences as Astronomy and Physiology, where experiments are impracticable;
  (2) we can reason from effect to cause; but though we cannot experiment on effects so as to find a cause, yet we can experiment on hypothetical causes so as to try to produce a required effect.

c. The advantages of Experiment are that we can produce a phenomenon, *e.g.* electricity,
  (1) in the exact degree required,
  (2) as often as required,
  (3) amidst familiar circumstances,
  (4) isolated from counteracting circumstances.

d. The rules for observations and experiments are:
  (1) they must be precise and accurate in detail;
  (2) they must be numerous enough to admit of an average being taken;
  (3) the circumstances must be as varied as possible;
  (4) the phenomenon should be isolated from immaterial circumstances, for the sake of simplicity,
  (5) and from circumstances that might counteract the effect it produces.

QUESTION 20. **State Mill's Methods or Canons of Induction; discuss the special value of each and the general objections that have been brought against them.**

a. Method of Agreement. Given that ABC produces *abc*, ADE produces *ade*, and so forth, then A, being the sole invariable antecedent of *a*, is the cause of *a*.

This is not the same as Induction *per enumerationem simplicem*, for that depends for its validity on the number of instances, while this method relies on the varied character of the instances. The special advantage of this method is that it is the method of observation, and therefore the one mainly applicable in such sciences as Astronomy, and in reasoning from effects to cause; and just as observation of effects suggests experiments on causes, so this method suggests applications of the succeeding one.

Its special disadvantage is the plurality of causes; that is, the same effect may be due to more than one cause. Thus in the above case *a* might be the effect of A in the first instance, but of D in the second. Still, in proportion as we multiply and vary the circumstances under which A and *a* are found, error on this ground tends to a minimum.

b. Method of Difference. Given that BC produces *bc*, and ABC produces *abc*, then A is the cause of *a*. This is essentially the method of Experiment, for in Observation it is very difficult to find instances that admit of its application.

c. Joint Method of Agreement and Difference. This consists of three stages:

(1) By the Method of Agreement we observe that ABC produces *abc*, ADE produces *ade*, and so forth.

(2) By the Method of Agreement we also observe that FG (without A) produces *fg*, HK (without A) produces *hk*, and so forth.

(3) By the Method of Difference we conclude that as a is always present when A is present, and always absent when A is absent, A is the cause of a.

The first stage by itself has all the inconclusiveness of the Method of Agreement, but it suggests and is confirmed by the second stage. On the other hand, the second stage could not be satisfactorily worked by itself, for the cases where we do not have a certain antecedent and a certain consequent are too numerous and complex to be even approximately covered by any set of instances.

The special advantage of this method is that it gives us A as the only cause of a.

d. Method of Residues. Given by trial that ABC produces *abc*, then, though we can find no instance of BC producing *bc*, yet, if as the result of a previous induction or deduction (usually the latter) we know this to be the case, A is the cause of a.

This method is especially applicable in reasoning from residual effects to residual causes; *e.g.* in discovering the position of an unknown solar body from the apparent aberrations of another such body.

e. Method of Concomitant Variations. Given that one phenomenon varies in amount or intensity with another, then the two are causally connected.

This method is especially applicable when we can in no instance entirely get rid of the phenomena that are cause and effect, *e.g.* in proving the first law of motion or the action of the moon on the tides.

The advantage of this method is that we are not hampered by the Intermixture of Effects; the disadvantage is that our conclusion only holds good for about the limits within which we have found the phenomena to vary. Thus the temperature of water constantly rises with the application of heat, but ceases rising at boiling-point.

f. The following objections apply to the methods generally:

(1) They are not the ordinary form into which we put our reasonings.

Reply. Just as all deductive reasoning may be expressed syllogistically, and so admit of a ready test, all inductive reasoning may, if we choose, be thrown into this form. And the province of Logic is not to find arguments but to test them.

(2) Nature is so complex that we can rarely find instances corresponding to our symbols; thus we cannot introduce a new antecedent without at the same time introducing many others.

Reply. We may leave out of count many phenomena which we know on other grounds to be immaterial to the purpose in hand.

(3) The Intermixture of Effects which counteract or even neutralise each other; thus if ABC is the antecedent of *abc*, it may be that the effects of A and B neutralise each other, and that C is really the sole antecedent.

Reply. By multiplying and varying our instances we may reduce this difficulty to a minimum.

(4) They only establish a causal connection, and we are liable to mistake cause for effect, joint-effect for cause, and so forth.

Reply. We can generally find an *experimentum crucis* to decide this point.

QUESTION 21. **How would you define, for logical purposes, cause and chance? Discuss (*a*) the relationship in time of cause and effect, (*b*) how far a purely algebraic Theory of Probabilities enters into Logic. What are the logical difficulties of demonstrating a matter of fact?**

a. For the application of Mill's Methods, where the aim is to discover uniformities of succession, it is sufficient to define a cause as an invariable antecedent, but such a definition is psychologically untenable (Q. 40). Even logically the real cause is the sum of the antecedents, but of these we usually select one as being

(1) the most conspicuous, even though negative; *e.g.* 'The army was lost because the sentinel was not at his post';

(2) active rather than passive; *e.g.* 'He fell

because his foot slipped,' and not 'because he was a material body subject to the law of gravitation.'

The rest of the antecedents are called the conditions of the cause, or the collocation of circumstances in which it is operative.

b. The relationship in time of cause and effect is fourfold (but see Q. 40):

(1) The effect ceases when the cause does; *e.g.* the light stops when the candle is blown out.

(2) The cause ceases but the effect continues; *e.g.* the rust on iron, when the air is no longer damp.

(3) The cause ceases but produces another cause; *e.g.* the motion of a cannon ball.

(4) The cause continues and the effect is progressive; *e.g.* the acceleration of falling bodies.

c. A chance event is a coincidence of phenomena from which we have no ground for inferring uniformity of succession; but if the number of coincidences be habitually more than would result from the algebraic Theory of Probabilities, there is a residuum which can be traced to a uniformity. Thus if dice habitually fall one way, we may conclude that they are loaded, and therefore will always be more likely to fall that way than any other.

Hence before we can rely on the algebraic theory, we must

(1) take frequent case and strike an average, so as to see whether chance and law are mingled;

(2) eliminate so much of the frequency of the coincidences as is the result of the frequency of the phenomena; *e.g.* one reason why it rains most often with a west wind, is that the wind is most often west.

In practice, however, we never rest content with expecting the result given by algebraic theory, but go back to the antecedents of a supposed cause and try to find evidence which would tend to prove or disprove some explanation of the connection between cause and effect.

d. A present object of sense cannot be demonstrated, but rests on the basis of Perception (Q. 38 *c*).

To prove a past event, we show that it must be assumed as cause to account for certain admitted effects, *e.g.* the case of the loaded dice, which is mentioned above; but here the difficulty is that many causes may produce the same effect.

To prove a future event, we show that it must follow as effect from certain admitted causes, *e.g.* the rising of the sun, as an effect of the constitution of the solar system; but here the difficulty is that other causes may intervene to counteract the expected effect.

QUESTION 22. **Analyse the whole process of inductive inference, pointing out the fallacies to which it is liable, and discussing the completeness of the results attained by it. Distinguish between the empirical and deductive stages of a science, and discuss the validity of an empirical law.**

a. The process begins with Induction per *enumerationem simplicem,* which involves classification and indiscriminate observation. Then analogy and hypothesis suggest to us what special observations or experiments we must make in order to get instances suitable for one or more of Mill's Methods. Then we apply these methods in order to generalise from our special instances, and so reach a general conclusion which may be expressed in terms of cause and effect.

b. The fallacies incident to the Inductive Process may, therefore, be thus classified:

- (1) Fallacies incident to Observation and Experiment, viz.,
    - (*a*) Non-observation of instances; *e.g.* we are apt to notice affirmative instances rather than negative, and such as suit a preconceived theory rather than such as do not.
    - (β) Non-observation of circumstances; *e.g.* we may attribute the cure of a disease to a medicine, when it is really due to natural recuperative powers which we have overlooked.
    - (γ) Mal-observation; *e.g.* we are apt to confound inference with observation, as when we say that we see the sun go round the earth; what we do see is quite compatible with the theory that the earth goes round the sun.
- (2) False Analogy; see Q. 18. This includes
    - (*a*) Neglect of the two conditions under which analogy is justifiable.
    - (β) Misjudgment of the two ratios on which an analogy depends.

        - (γ) Specifically, inference from analogy when there is no real ground for analogy at all; thus the Franks who settled in Gaul gave the feminine gender to many Latin neuter nouns which had a plural ending in *a*, on the analogy of feminine singulars with the same termination.
    - (3) Fallacies incident to Generalisation, viz.,
        - (*a*) Misapplication of Mill's Methods; *e.g.* we may come to a conclusion from instances inadequate in amount or variety.
        - (β) *Non causa pro causa,* if we mistake
            - (i) cause for effect or effect for cause;
            - (ii) joint-cause for cause, or joint-effect for effect;
            - (iii) joint-effect for cause, or joint-cause for effect.
        - (γ) *Post hoc, ergo propter hoc,* if we regard an antecedent as a cause, when it is really an immaterial circumstance.

c. But the generalisations obtained by the Inductive process are not yet scientific theories; the laws derived from Observation and Experiment require to be explained before we can understand their limits and safely reason from them; a complete explanation constitutes a proof, and materials for explanation, in the form of observations and experiments, constitute evidence.

To explain such a law, we require to bring it under a more general law by showing

- (1) that it is only a special case of a more general law; *e.g.* when we explain the

law of each planet's motion by Kepler's Laws;
- (2) that it is an intermixture of the effects of two known laws, *e.g.* the law of the trade winds;
- (3) that it is one of a chain of successive causes and effects.

d. Hence we have three stages of the laws of a science:
- (1) Empirical laws proper; these are the results of Induction *per enumerationem simplicem.* Such were the laws of Astronomy when men had simply classified the facts of the motions of heavenly bodies, and such is still for the most part the condition of the Classificatory Sciences,—Botany, Zoology, and so forth.
- (2) Laws of Induction; these are the results of the application of Mill's Methods, but, as distinguished from explained laws, are still only empirical. Such were the laws of Astronomy when men had obtained the law of a planet's motion but could not deduce it from a more general law.
- (3) Explained laws of Induction; *e.g.* the laws of Astronomy, Mechanics, and Physics as falling under the Law of Gravitation and the Laws of Motion, the Laws of Logic as falling under the Laws of Thought. When a science has reached this stage, it becomes deductive; new laws in it are no longer laboriously discovered by Induction, but are deduced from these more general laws and only verified by Observa-

tion and Experiment, while quantitative reasoning takes the place of inductive experiment.

Some sciences, such as Arithmetic and Geometry, are deductive almost from the very commencement, the results of Induction being summed up in certain elementary axioms.

e. An empirical law, therefore, being an unexplained law, only holds good provisionally and within the limits of time and circumstances which form the ground of it. Thus, as long as Astronomy was an empirical science, men could not be sure of the sun's rising, but we now know that the non-rising of the sun would mean a disturbance of the solar system of which there would probably be traces years beforehand.

QUESTION 23. **Analyse the Deductive Method, discussing the function of Hypothesis in Scientific Theory.**

a. The first stage of the Deductive or Combined Method is a process of inductive inference which results in unexplained, and therefore empirical, laws; *e.g.* the law that heavy bodies tend to fall to the ground.

Even in this stage Hypothesis has a place; for in all experiment we must have some sort of hypothesis, however vague, or there would be no reason why we should try one experiment rather than another.

b. The second stage is Hypothesis:

(1) *Definition.* A hypothesis is a supposition

made without evidence, or on evidence avowedly insufficient, in order to deduce from it conclusions in accordance with known facts; *e.g.* the subsumption of various empirical laws under the general Law of Gravitation.

(2) *Functions.* The hypothesis has three functions:
  - (*a*) In the Deductive Method it is provisional, and requires either to be verified or to be modified after attempted verification.
  - (*β*) In some cases it is the only kind of solution possible.
  - (*γ*) In every case it colligates the data of an inductive problem, and, though itself inadequate as a solution, prevents us from losing sight of them.

(3) *Conditions.* The conditions of a scientific hypothesis are,
  - (*a*) It must not conflict with established laws.
  - (*β*) It must admit of some sort of test by way of proof or disproof.
  - (*γ*) It must assign a fully adequate cause for the phenomena in question.
  - (*δ*) It must not be gratuitous; if there is already a satisfactory explanation of the phenomena, no other is needed. This is Hamilton's Law of Parsimony.
  - (*ε*) It should have breadth, *i.e.* it should account for as many other phenomena as possible besides those in question.

(η) It should have simplicity, provided that this simplicity is not the result of haphazard guess-work, as in the case of the axioms of the Scholastic Philosophy, but of gradual explanation of the less general by the more general. A hypothesis that is full of exceptions and limitations, such as the Ptolemaic Theory of Astronomy, is sure to be difficult of application in its own province, and of no use in other branches of Scientific Thought.

And a hypothesis must be simple in proportion to the ultimateness of the uniformity that it enounces. As the extent of a law of Nature increases, its intent decreases; a law applicable to solids will subsume more uniformities than one applicable to all matter.

c. The third stage is Verification, or the test of our hypothetical generalisation by seeing whether deductions from it correspond to new facts; *e.g.* the application of the Law of Gravitation to the effect of the moon on tides. The most conclusive verifications are when we deduce from the hypothesis

(1) facts that have not yet occurred or been noticed,

(2) facts which were quite outside the range of the inductive instances from which we formed the hypothesis.

A hypothesis thus verified becomes a Scientific Theory.

QUESTION 24. **What is the basis of an ultimate law? Illustrate your answer by a reference to the axioms of Arithmetic and Geometry.**

a. The basis of ultimate laws, to which successive generalisations lead us, is twofold:

  (1) They sum up an Induction *per enumerationem simplicem,* which includes the whole of our experience on the matter in question. Thus we have never known a case where the sum of two units was other than two, and, never having known such a case, cannot even conceive it; any contradiction of such an axiom is, therefore, impossible as a mental fact.

  (2) They are hypotheses, the rejection of which would involve the reversal of numerous other laws deduced from them and verified by experience. If, therefore, we meet with an apparent exception to such an ultimate law, or to one that can be deduced from it, we do not conclude that the law is invalid, but only that the exception is due to some counteracting cause.

b. But to the axioms of Arithmetic and Geometry there has also been assigned a basis independent of experience, and the status of 'necessary truths,' on the ground that

  (1) There is no direct appeal to experience. Against this it is urged that

    (*a*) the experience may be mental and not external; thus it is held that we can imagine two things exactly equal, though our measuring instruments only give us approximate equality.

(β) the experience may be implicit in the definition. Thus if we have the conception of a three-sided figure, we know, apart from experience, that such a figure has three angles, because triangularity is involved in three-sidedness; but we gained the original conception of three-sidedness from experience.

(2) The opposite of such axioms is inconceivable, and this is held to show that they possess special validity apart from experience. Against this it is urged that

(*a*) Inconceivability is relative to the general state of knowledge. Thus the Patristic writers expressly declared that the existence of Antipodes was inconceivable.

(β) Inconceivability is purely subjective; our power of conceiving a thing is not only determined by our experience, but dependent on our individual temperament.

(γ) Inconceivability, so far as it is a valid test, is merely a summing up of our experience, which may as well be referred to directly. For though we can conceive of white crows and floating blocks of iron, that is only because analogous experience helps us to disunite the constituent ideas in each case.

(3) The basis of such axioms is not empirical but subjective. Space is not a product but a condition of experience, and axioms that express laws of space are, therefore, rules antecedent to experience, to which rules experience must conform (Q. 38 *b.*)

But even if we admit that the space-conception is part of the original furniture of the mind, and is thus prior to experience, yet the laws of space have to be empirically discovered.

In any case, however, all scientific truth is relative to the present constitution of nature and of the human mind (Q. 41).

PART II.

PSYCHOLOGY.

QUESTION 25. **What are the Methods of Psychology? On what grounds has it been thought incapable of scientific treatment?**

a. The Subjective or Introspective Method, the subject-matter being the facts of individual consciousness. But the objections to this method are that

- (1) the facts are too evanescent, for
  - (*a*) the mental state observed is altered by the very fact of our observing it. Observation implies Attention, and Attention must either modify or destroy many of the facts that require to be observed;
  - (*β*) many mental states presuppose that the person affected is not at the time capable of scientific observation; a man cannot, for instance, at the same time be both angry and a calm student of anger;
  - (*γ*) the memory of such mental states is uncertain, and is often dim in proportion to their intensity (Q. 42 *d*):

- (2) the scope is too limited, for the observer is not only confined to his own mind, but can only study that
    - (*a*) in its recent conditions,
    - (*β*) after it has reached maturity:
- (3) the result is inconclusive, for
    - (*a*) the observation is carried on by only one man, whose work (from the nature of the subject-matter) cannot be independently tested;
    - (*β*) he could only succeed in classifying, and not in explaining, mental phenomena.

b. The Objective or Inductive Method, the subject-matter being the manifestations of other minds in actions and words. But

- (1) the phenomena are in themselves too complex for any rigid application of inductive methods;
- (2) the environment is in each case too unfamiliar for us to draw any certain conclusions;
- (3) the results that we do get, have to be interpreted subjectively, *i.e.* by reference to our own self-consciousness, so that we do not even escape from the difficulties of the Introspective Method.

QUESTION 26. **Discuss the connection between Brain and Mind, and state how you would account for it. Is it possible to rest Psychology on a physiological basis?**

a. The phenomena of consciousness are correlated with certain modifications of the nervous system and the brain, for

  (1) generally speaking, the brain develops proportionately with the development of intelligence, and this holds good both in the individual and in the race;
  (2) a sensation can be excited by pure nervous action without external stimulus;
  (3) the loss of certain nerves or brain-centres means the loss of the corresponding sensations;
  (4) an injury to the brain is specially likely to produce mental incapacity, and mental strain is physically felt most in the head;
  (5) mental hallucinations are caused by an excessive blood-supply in the brain;
  (6) it is generally admitted that there is a hereditary transmission of non-physical properties.

b. The materialist explanation of this connection is, that facts of consciousness are really facts of Applied Physiology; the energy of the stimulus of sensation is mechanically converted into neural energy, and neural energy into energy of consciousness. But

  (1) Consciousness is purely subjective, and is not a modification of physical energy.
  (2) Physiology does not even attempt to account for anything but mere Sensation, and gives us no basis for Memory, Judgment, and so forth.
  (3) Physiology gives no explanation of the activities of the Ego as an agent that compares and associates sensations.
  (4) During middle life and old age the intellect develops, but the brain remains the same.

To this it is replied that though the brain in bulk remains the same, yet its constituent molecules may be constantly forming new dynamic associations.

c. The Intuitionist explanation is that while nervous action is the occasion of sensation, the cause itself is Mind. The physiological phenomena are the invariable antecedent, but they are not the unconditional invariable antecedent.

d. In any case, we could not treat Psychology as a deductive science dependent on Physiology, because, though we do not know much of the psychological aspect of facts of consciousness, we know still less of the physiological. But as long as we deal with nothing but Sensation, Physiology is a considerable help.

QUESTION 27. **Define Consciousness, and state how you would group the mental faculties. What are the objections to any such system of classification, and what other method of analysis might you adopt?**

a. Consciousness is the recognition by the mind of its own acts and affections; it is, therefore, a genus of which the various modifications of mind are species.

The term is also used of our apprehension of the Non-ego, when that apprehension appears to involve no inference and to be intuitive; but, strictly speaking, we can only be conscious of our own mental states. Consciousness is, however, only self-consciousness when we definitely refer a mental state to ourselves.

All consciousness is of the present, both in Time and Space. Thus

(1) Memory is not consciousness of the past, but of certain present mental modifications.

(2) Perception, *e.g.* of the sun, is not consciousness of the distant, but of certain rays of light directly impinging on the retina.

b. Consciousness regarded statically, *i.e.* as complete and at rest, includes three faculties, Feeling, Knowing, and Willing. Of these, Feeling is the primary; Knowing or Cognition requires also the presence of an object, if only the Ego to which the consciousness is explicitly referred; Willing or Volition implies both the preceding.

The objections to such a classification are:

(1) The faculties have no separate existence, for each implies the others. Thus there is no Knowing without Attention, which is the germ of Willing; and we can hardly conceive Feeling apart from Cognition. Every fact of consciousness is both emotional and cognitive, and, to some extent, volitional; but, as a rule, only one aspect predominates.

(2) The faculties, taken together, do not exhaust the genus. The mind is not a bundle of faculties, but these are only certain aspects of Mind, and predicates of it. Over and above the faculties there is the unifying, associating, and comparing activity of Mind.

(3) Classification is not explanation. If our

classification were perfect, we should only have completed the first stage of the Science of Mind (Q. 22 *d*).

The faculties are, therefore, only predicates of the Ego, which both controls them and is conditioned by them as data. In relation to the Ego Feeling is passive and Volition is active, while Cognition consists in analysing the passive data of Feeling by means of the active powers which find their fullest realisation in Volition.

c. But we may also regard consciousness dynamically, *i.e.* trace its stages as a growing organism. Thus the stages of Cognition are Sensation, which furnishes the data, Perception, Memory, Imagination, and Thinking; while Thinking has as its subordinate stages Conception, Judgment, and Reasoning. But as Cognition develops along these lines, a *pari passu* development of Feeling and Volition is requisite, and it is only because the stages of Cognition are more ascertainable and definite, that we trace the growth of Mind by way of Cognition, and regard Feeling and Volition as subordinate.

QUESTION 28. **State the physiological stages, attributes, and conditions of Sensation, distinguishing it from kindred terms, and pointing out its function in knowledge. Is Sensation the same as Consciousness of Sensation?**

a. Sensation is any consciousness arising from an action in the bodily organism.

(1) *Physiological Stages.* Physiologically the process is as follows: a physical stimulus impinging on an organ of sensation, sets

up nervous action in an afferent nerve which transmits the nervous impulse to the brain, and in the brain the nervous impulse is translated into consciousness.

There are thus three stages, the physical, the neural, and the mental. But the first stage is not indispensable; thus we can have a sensation of light in the dark, nervous action being in this case set up by an internal and not an external stimulus.

(2) *Attributes.* A sensation, though in itself unanalysable, may be discriminated according to its quantity, quality, and duration.

(3) *Conditions.* The amount of a sensation depends on

- (*a*) the intensity of the stimulus. But this is only true within certain limits; an excessive quantitative change in the stimulus may either
  - (i) destroy the sensation: thus a very bright light blinds us, and a very loud noise deafens us;
  - (ii) or alter its quality: thus the sensation of heat may gradually merge into that of cold;
- (*β*) the receptivity of the organism. The organism in general, or a special organ, may be either
  - (i) unusually active owing to general vitality or abnormal conditions,
  - (ii) or unusually enfeebled owing to general weariness or strain on a special organ.

And even in the case of a normal stimulus and a normal receptivity, Weber has shown that though a proportion does exist between stimulus and sensation, yet the ratio not only differs in the case of each sense, but also in the case of any one sense varies progressively, each successive equal addition to the stimulus producing a smaller addition to the amount of the sensation.

b. *Sensation* is the name both of the process and the product. *Sensibility* is the capacity of Sensation. *Sense* is any specific form of sensibility. *Sentiment,* however, is a form of Feeling, and the name is specifically used of that group of Emotions which is most remote from sense-feeling (Q. 43 *b*).

c. Sensation is not so much a form of knowledge as the raw material of all Feeling and Cognition; and the study of its details, therefore, belongs to Physiology rather than to Psychology. If we could know a sensation as such, it would be no longer mere sensation; sensation, as such, is mere inarticulate and unlocalised consciousness of warmth, for instance, or odour, or light.

d. Sensation, therefore, is not the same as Consciousness of Sensation. Sensation, as such, involves no reference of the consciousness to the Ego, no discrimination between the recipient self and the external stimulus; but by Consciousness of Sensation, and still more emphatically by Self-consciousness, we mean that we do consciously refer a sensation to ourselves.

Thus originally the product is absorbed in the process; the sensation is myself feeling. But when a sensation differentiates itself as a product, we can exercise fresh mental activity on it as such; self-consciousness is 'I feel myself feeling.'

QUESTION 29. **Classify Sensations, pointing out the special functions of each in Cognition.**

A. We may classify sensations according to their sense-organs into
  - *a.* Sensations of the Special Senses, *i.e.* those which have an organ exclusively appropriated to sensation; these are
    - (1) Taste, excluding certain sensations of smell (as in eating onions) and alimentary and skin sensations.
    - (2) Smell, excluding pulmonary sensations and also alimentary and skin sensations.
    - (3) Touch, inclusive of
      - (*a*) sensations of contact,
      - (β) rudimentary sensations of pressure,

      but exclusive of general skin sensations, temperature sensations, and developed sensations of pressure.
    - (4) Hearing, which has for its stimulus noises and musical sounds. The latter vary according to
      - (*a*) intensity, as loud and soft notes,
      - (β) pitch, as high and low notes.
    - (5) Sight, which of itself only includes
      - (*a*) sensations of pure light,
      - (β) sensations of colour.
  - *b.* Sensations of the General Senses, *i.e.* those which

have no organ or organs exclusively appropriated to sensation. These include

(1) Muscular sensations; these are due to the contractility of the muscular tissue, and are the consciousness of its contraction or expansion. They are the only sensations that are not passive but active; they are not the consciousness resulting from a nervous impulse which reaches the brain by an afferent nerve, but are excited by a nervous impulse which is transmitted from the brain by an efferent nerve and translated into muscular action. Of themselves they include

  (*a*) sensations of a dead strain, the amount of the sensation depending on the intensity of the strain;

  (β) sensations of muscular action, the character of the sensation depending on the direction and the duration (rapidity or slowness) of the resulting motion.

  But they also combine with Touch and Sight to form Active Touch and Active Sight. The sensations of Active Touch include sensations of hardness and softness, roughness and smoothness, and so forth; those of Active Sight form the basis of Visual Perception.

(2) Pulmonary sensations, *e.g.* as experienced in breathing a vitiated atmosphere.

(3) Alimentary sensations, as experienced in nausea.

(4) Temperature sensations, *i.e.* those of heat and cold.

(5) Skin sensations, *e.g.* those of tickling and of eating irritant substances.

B. But we may also classify the senses according to the contribution which they make towards the building up of Mind. Thus we have

a. The Emotional Senses, viz. Taste, Smell, and, in a lesser degree, the last four general Senses. For the sensations due to any of these can only be classified as agreeable and disagreeable, *i.e.* according to their emotional value, and cannot be accurately discriminated so as to form a basis of cognition.

b. The Cognitive Senses, viz. Active Touch, Active Sight, Hearing; these, though more emotional than Taste and Smell, are only emotional secondarily and indirectly by reason of the associations which they call up.

Of these, Hearing is the time-sense and Touch the space-sense, but the sensations of Sight become representative symbols of those of Touch.

Touch has been called the most fundamental sense, on the ground that

(1) all sense-stimulus acts in different forms of contact;

(2) it is the test-sense to which we refer when others conflict or are uncertain.

QUESTION 30. **Explain the laws of Association and the conditions under which they operate.**

a. The Primary Principles of Association are:

(1) Identical states of mind, differing only in the time of their occurrence, suggest each other;

    - (2) the scope is too limited, for the observer is not only confined to his own mind, but can only study that
      - (*a*) in its recent conditions,
      - (*β*) after it has reached maturity:
    - (3) the result is inconclusive, for
      - (*a*) the observation is carried on by only one man, whose work (from the nature of the subject-matter) cannot be independently tested;
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- *b.* The Objective or Inductive Method, the subject-matter being the manifestations of other minds in actions and words. But
  - (1) the phenomena are in themselves too complex for any rigid application of inductive methods;
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(2) The faculties, taken together, do not exhaust the genus. The mind is not a bundle of faculties, but these are only certain aspects of Mind, and predicates of it. Over and above the faculties there is the unifying, associating, and comparing activity of Mind.

(3) Classification is not explanation. If our

as subject, is set over against 'Myself warm,' as object.

(β) The Ego, as here and now, set over against the object, as then and there; that is, it involves Time and Space. Time, however, is already implicitly involved in Identification of Sensation, but, when the sensation is definitely referred to an object, rises more fully into consciousness.

(γ) The possibility of referring a whole group of sensations to one object, which thus becomes a complete presentation; that is, Objectification necessitates our belief in an external world.

(3) Localisation of Sensation; not only do we regard the Ego as the subject of sensations, but we refer a sensation, *e.g.* a contact, to a particular part of ourselves. This is held to be due to a special quality of the cognitive sensations, called their local sign, each sensation carrying with it a certain accessory impression which varies with the part affected; but even if this be so, we only gradually learn to localise our sensations and to connect certain sensations with certain sensitive areas.

When, however, this connection is once formed (by ourselves or perhaps even by our ancestors), it is an Inseparable Association of extraordinary persistence; thus a man whose leg has been amputated still seems to feel pain in his toes, when it really affects the new termination of the old nerve, and the same is even asserted of those who have been born maimed.

(4) Personal activity of the Ego as recognising, objectifying and localising Sensation; this appears to be the origin of our conception of Cause.

b. Perception, however, does not necessarily imply the existence of concrete definite objects; it only means that we are so constituted as to necessarily translate our sensations into the forms of externality. The sensation is the sign which represents to us the external object, but the sign need not resemble the object any more than the word 'book' resembles the thing.

c. Erroneous Perception is due to

(1) Erroneous sensory data. For our sense-apprehension is limited in

(*a*) Space; thus within certain limits, which vary in different skin areas, the two points of a pair of compasses are felt as one.

(β) Time; thus the sensations excited by a rapidly whirled point of light fuse into those of a continuous ring.

Sensation also varies with the receptivity of the individual organism, and is modified by special organic defects, such as those which cause colour-blindness.

(2) Erroneous objectification of sensations. This is especially the case in hallucinations, hypnotic states and dreams, where

the sensation is correctly recognised, but

(*a*) It is attributed to external stimulus, whereas it is a subjective sensation produced by nervous action which is due to internal stimulus. The sensation is regarded, as in previous cases, as being the sign of the object, but the object is not there.

(*β*) It is built up into cognition by mechanical association and apart from the controlling activity of the Ego, which is not sufficiently awake for accurate Dissociation in the Perceptive Process.

QUESTION 32. **Analyse Visual Perception. How far does the sense of Hearing enable us to apprehend direction or distance?**

a. The basis of Visual Perception is partly tactual and partly muscular:

(1) We can have simultaneous sensations of Touch, as when we touch one object with the right hand and another with the left, and so we gain our apprehension of extension or co-existence in Space.

(2) When we have two such sensations, we learn that a certain quantity (intensity) and quality (rapidity or slowness) of successive muscular sensations is required in passing from one object to the other. Thus by distance, size, and figure we ultimately mean a certain quantity of muscular arm-power or leg-power intervening

between various objects or parts of an object.

b. Visual Symbols. The sense of Sight, though incapable of originating Visual Perception, makes its own proper sensations of light and colour representative of these muscular sensations, and, by its power of simultaneous apprehension, symbolises the successive sensations of a tactual series by the co-existent sensations of a visual group. When the process is complete, the former sensations are so entirely merged in the latter, that they pass out of consciousness, and we imagine we see bodies not only as coloured, but also as extended.

c. The way in which the visual sensations become symbols of the muscular, is as follows:

  (1) Perception of Direction. We infer the direction of an object from finding out how much we have to shift the head or eye in order to bring the visual image on to the point of most acute vision. But when an association has thus been formed between the local sign of the light-sensation (Q. 31 *a*) and the requisite muscular motion, the light-sensation suggests the direction apart from actual muscular motion.

  (2) Perception of Distance. The principal visual symbols are:

    (*a*) In Monocular Vision

      (i) distinctness or haziness of the retinal image;

      (ii) apparent size of the object, if the real be known;

        (iii) vagueness of outline, and distribution of light and shade;
        (iv) the fact that a nearer object covers the more distant;
        (v) the fact that if we move, nearer objects seem to move past us faster than more distant ones;
        (vi) the tension of the accommodation muscles of the eye;
    (β) In Binocular Vision, also
        (vii) convergence of the axes of the eyes for a nearer object;
        (viii) similarity or unlikeness of the retinal pictures in either eye, the images being dissimilar in proportion to the nearness of the object. Thus a painting cannot be properly viewed quite close at hand, and in the stereoscope we can make two separate pictures appear as one.

(3) Perception of Size and Figure. This depends primarily on our knowing the distance; thus the hazy outline of a man in a fog suggests that he is further off than he really is, and, therefore, he appears larger. But if we have adequate visual symbols of distance, we can tell size and figure by
    (a) the retinal magnitude of the object, combined with our knowledge of its distance;
    (β) the amount and character of the motion of the muscles of the eye

that is required to take in its whole surface.

(4) Perception of Solid Objects is only a special form of Perception of Distance; Perception of Motion is combined from Perception of Distance and Perception of Direction.

d. Objections to the Theory of Visual Perception:

(1) We appear to see objects instantaneously by the eye. But

(*a*) We only see the retinal magnitude, and that varies according to distance.

(*β*) Infants and persons born blind, but restored to sight, have no such power of instantaneous perception of extension or depth.

(*γ*) We similarly appear to read and walk instantaneously, but we know that those are processes which have to be learned.

(2) Though we only see colour, yet if we see two adjacent colours, or one enclosing another, we must be conscious of the length and breadth of a coloured surface. But

(*a*) If we were thus directly conscious of extension, that would be due to the adjustment of the muscles of the eye, as it is taking in the whole surface.

(*β*) Such consciousness of extension would be only very rudimentary and vague.

(3) Some animals are capable of visual perception at birth. But there are many things which animals can do

instinctively but man has to learn slowly and laboriously; thus the sense of Smell in animals is certainly more developed than in civilised man.

e. Similarly Perception of Distance and of Direction by the sense of Hearing is only an inference, and not an immediate process. For Distance is thus determined by the loudness or faintness of the sound, and Direction by the fact that it strikes more fully on one ear than on the other.

QUESTION 33. **Analyse Memory, Expectation, and Imagination. What are the logical correlatives of Imagination?**

a. Memory is the consciousness of a past sensation, or group of sensations, as past. It, therefore, involves

(1) Reproduction, or revival, of past presentations. This is sometimes called Simple or Reproductive Imagination, as when the mind represents to itself past objects of perception, *e.g.* a particular horse; thus it implies

(*a*) Re-presentation of past presentation; just as perception involves the recognition of sensation, so memory involves the recognition of the percept.

(β) Retention of the representation, or mental image of a past presentation. The difficulty is to account, not for Remembering, which must be an ultimate factor of Mind, but for Forgetting; the latter may, however, be explained as a corollary of the Laws of Association (Q. 30 *d*).

(2) The belief that this representation is the mental image of a past presentation; this involves

- (*a*) Apprehension of Time, *i.e.* the recognition of two mental states as successive. Thus Time here emerges still more distinctly into consciousness than in Perception.
- (*β*) Apprehension of the Ego, *i.e.* the recognition of a continuum of Mind as the subject both of the past presentation and the present representation of it.

b. The Laws and Conditions of Memory are the same as the Laws and Conditions of Association. But the retention of the mental image seems to depend mainly on attention to the presentation, while the reproduction of the image is chiefly conditioned by frequency of previous associations between the recalling and recalled states.

Thus the possible errors of Memory would include

1. erroneous re-presentation, due to want of attention to the presentation;
2. erroneous reproduction, due to inadequacy of connecting links of association;
3. erroneous reference to the Perceptive Ego, if we attribute an image to past perception when it is really the product of Constructive Imagination or of Thought.

c. Expectation implies Memory and Association, and rises into consciousness when an association has been formed between two successive groups of sensations, and the presentation of the first group leads us to expect the presentation of the second.

d. Complex, or Productive, or Constructive Imagination combines a part, or the whole, of previous representations into a new representation which need not have a corresponding presentation at all, *e.g.* a centaur. It is, therefore, the psychological correlative of two logical processes,

(1) Analysis by Dissociation; Imagination apprehends one quantitative or qualitative part of a whole presentation, and gives it a mental existence independent of the whole to which it originally belongs. That is, Imagination picks out unity from diversity.

(2) Synthesis by Association; Imagination takes these products of its own analysis, and combines them into new mental products. That is, Imagination combines diversity into unity.

Hence we can trace the operation of Imagination in every sphere of Mind:

(1) Intellectual or Scientific Imagination is the psychological basis of

(*α*) the analytic process of the Inductive Methods, picking out the common attributes of groups of phenomena;

(*β*) the synthetic process of Hypothesis, grouping phenomena under general laws. The idea that underlies the hypothesis is the product of Imagination, the working out of the idea into a practicable shape is the product of

Reason or Thought, and the amount of reasoning required increases (as in the case of the Ptolemaic Theory of cycles and epicycles) in proportion to the complexity of the hypothesis.

So far, however, as Imagination does not conform to the conditions of the Inductive Process, and of Scientific Hypothesis (Q. 23 *b*), it will be an obstruction rather than an aid to knowledge.

(2) Æsthetic Imagination is the basis of the Fine Arts.

(3) Practical Imagination is the basis of Applied Science.

QUESTION 34. **Analyse Conception and discuss the mental processes involved in it. What is the import of General Terms?**

a. Conception, the first stage of Thought, is the apprehension of a group of attributes connoted by a common name and referred to an object of Thought; in Perception we apprehend the attributes of an individual concrete object, in Conception those of a class. Thus Conception has three stages:

(1) Abstraction, which may be defined

(*a*) Generally, as the holding away of a part of our experience from the rest and contemplating it by itself.

Adopting this definition, we might have singular abstract terms; for if we were to abstract 'colour' from 'orange' and proceed no further, 'colour' would be an individual abstract notion, and, if named, would be a singular term. But such Abstraction without subsequent Generalisation would be useless in Thought.

(*β*) Specifically, as attention to the points of resemblance in a group of phenomena combined with neglect of the points of difference. In this narrower but proper sense of the term, Abstraction implies

  (i) Association, the grouping together of phenomena which resemble each other in certain particulars.

  (ii) Dissociation, the concentration of attention on the points of resemblance.

It is thus a process of analysis, of which we have the psychological rudiments in Constructive Imagination.

(2) Generalisation, the summing up of the results of Abstraction in a collective form.

  (*a*) Adopting the first definition of Abstraction, we might have quasi-general terms which are not class terms. Thus if, after abstracting the various attributes of 'Socrates,' we should coin the word 'Socratism' to express the sum of those attributes (and not the attributes of *a* Socrates, *i.e.* any great philosopher), we should have a quasi-general term which would not be a class term, and such a proposition as 'Socratism is admirable' would not be an assertion about a class.

But just as 'colour,' if simply abstracted from 'orange' and not from a group of coloured objects, is not a proper abstract term, so 'Socratism,' not being the result of true Abstraction, is not a proper general term.

(β) Adopting the second definition of Abstraction, we recognise in Generalisation a process of synthesis, which also first emerges in Constructive Imagination.

(3) Naming. The result of Abstraction, when thus generalised, is registered under a class name and is termed a concept; the psychological concept is therefore equivalent to what from a logical point of view would be the connotation of a class name.

A general term thus formed need not refer to an actually existing class; it is sufficient if such a class can be conceived in thought, even though it has only one actual representative or none at all. But a singular term cannot be conceived as forming a class.

Naming, then, or some similar system of artificial signs, is an essential process in Thought (Q. 9), for the concept is the unit of Thought, and, unless registered in a class name, would rapidly tend to disintegrate; but by developing a system of natural signs, such as those of the animal world, we might perhaps make some progress in Thinking, though not much.

b. Of the import of general terms there have been three views:

  (1) The Realist View, that there does somewhere exist something objective which corresponds to the general term or abstract idea. But this view is connected with an obsolete form of metaphysical speculation and has now only a historic interest.

  (2) The Conceptualist View, that though no such objective entity exists, yet we can form a subjective conception of it apart from anything else; we can conceive 'triangularity,' for instance, apart from any special characteristic of a triangle, or 'roundness' apart from any particular round things.

  But we cannot conceive a triangle or a round thing except as possessing a certain magnitude, colour, and so forth; the concept can only exist in the mind as enveloped in the miscellaneous attributes of the individual.

  (3) The Nominalist View, that a general term is merely a convenient mark and has nothing answering to it either objectively or subjectively.

  But this is not the whole truth. Though we cannot think an abstract attribute by itself, yet we can concentrate our attention exclusively on certain attributes of an individual mental image, and can reason about them just as well as if we could conceive them separately.

QUESTION 35. **Analyse Judgment and Reasoning. What is the import of Judgments?**

a. Judgment is the apprehension of a relation of co-existence or sequence between two concepts, and is thus the psychological correlative of a logical proposition. There are two kinds of Judgments:

(1) The Analytical Judgment, which only analyses the concept, setting forth the whole or a part of the connotation of the name. Thus its truth can be tested by an appeal to the concept, and the whole process is one of self-consciousness.

(2) The Synthetic Judgment states something of the concept which is not part of the connotation of the name; to test its truth we have to go out of ourselves and appeal from the concept to the fuller percept.

There are also Mathematical Judgments whose special peculiarity is that they have to be interpreted collectively and not distributively; thus 'Five shillings are ten sixpences' is not true of each of five shillings, but only of their sum.

b. The principal points of dispute in conflicting theories of Judgment concern

(1) The matter of the judgment, *i.e.* the two things between which a relation subsists. Thus we have

(*a*) The Nominalist View, which holds that we deal with two names, and that we affirm, or deny, one of the other. But though this is quite true of all propositions, it is only the whole truth about propositions in which both subject and predicate are proper names, *e.g.* 'Beaconsfield is Disraeli.'

(*β*) The Conceptualist View, that we deal with two concepts. Against this it is urged that all judgments would then be analytic; but this does not follow, for the connotation is only of the essence of the name, and the judgment may state something which is true of the name, though not part of its connotation.

(*γ*) The Objective View, that we deal with two concrete objects and not mental abstractions. But by thus appealing directly to Perception, we go over a good deal of unnecessary ground whenever our judgment is an analytical one, or deducible from an analytical one, and we still do not really travel outside ourselves; for Perception is just as much an activity of the mind as Conception, and we cannot eliminate the Ego.

(2) The form of the judgment, *i.e.* the nature of the relation between the two terms. We may hold (Q. 5 *b*) that a judgment means

(*a*) That the attributes of the predicate co-exist with those of the subject; this is interpretation in Intension.

(β) That the subject is included in, or contained under the predicate, both subject and predicate being interpreted in extension.

c. In Reasoning the matter consists of two judgments, and the form lies in so apprehending them that a third results. Reasoning is thus the psychological correlative of Syllogism, and the problems connected with it are discussed in Q. 12 *d.*

QUESTION 36. **Discuss the relationship of the three stages of Thought to each other, and of Thought to less developed processes of Cognition.**

a. The dynamic processes of Mind, beginning with Perception and ending in Reasoning, are not successive but parallel developments; they are not a table of weights and measures, each of which is the last *plus* a certain increment, but the more developed stage is always implied in the less developed.

b. The relationship is a progress from the particular to the universal. In Perception we apprehend concrete individual objects; in Imagination we leave behind us the concrete, and apprehend an individual image or ideal embodiment of an object; in Thinking we leave behind us both the individual and the concrete, and apprehend the universal meaning of a group of objects, finding a ground of coherence in co-existing ideas. Thus we perceive a particular man, but conceive Man in general.

And in developed Thought we leave behind us images as well as objects and the relations with which we have to do, often cannot be represented to the mind at all, but are expressed in symbols which (as in the case of Higher Algebra) we are frequently unable to interpret.

c. The relationship is a progress from the implicit to the explicit. Thus even the recognition of a sensation as being that of warmth contains in it the implicit judgment 'This is warm,' and as the Laws of Thought are really Laws of Judgment, they are thus implicitly involved in all consciousness.

Similarly the conception of 'man' implies a whole series of judgments which predicate of the name the attributes involved in its connotation; but while the concept merely implies a consciousness of identity or diversity, the judgment involves the consciousness that such identity or diversity is a fact. In Conception we think man; in Judgment we think the existence of man.

So, too, our first concepts are only apprehended as containing the sum of co-existent marks, but developed Thought shows us the concept as the function of marks which are unequally related.

d. The more developed stage, as implicit in the less developed, is absorbed in the product of the latter and does not yet rise into consciousness as a separate process, but as soon as a higher stage has been evolved, it throws new light on all the lower stages and renders them more definite.

Recognition of Perception, for instance, as involved in Memory, implies not only Judgment but a comparison of judgments, which is Reasoning, though it is only by a later analysis of our experience that we become conscious of Reasoning as such. Similarly Memory is implied in Perception, and Imagination in Memory.

QUESTION 37. **Analyse Attention and Belief. What is their relation to the processes of Knowledge?**

a. Attention and Belief are both activities of the Ego, and involved in the processes of knowledge, though not themselves faculties of Knowing. Attention arises into consciousness as the subjective side of Perception, Belief as the subjective side of Judgment.

b. Attention is the concentration of consciousness in any particular direction, and is implied even in consciousness of sensation; thus the soldier who is wounded in the heat of battle may be so excited as to be unconscious of the wound.

But though thus related to all consciousness, Attention first becomes explicit in Perception. When a ray of light impinges on the eye, we may be passive; but when we look back at the sun, we exercise active attention.

Implicit Attention is not, strictly speaking, voluntary, except so far as all mental activities are volitional rather than cognitive or emotional; in fact, Attention, being a rudimentary germ of Volition, cannot presuppose Volition. And even when Mind is fully developed, though we may will Attention, we often cannot by Willing withhold it in the presence of an adequate stimulus.

c. The Conditions of Attention, as implicit in all consciousness, are:

(1) General vigour of the organism.
(2) Quantity of stimulus, but a sudden increase of quantity is more provocative of Attention than a gradual.
(3) Quality of stimulus, but a sudden change of quality, as from heat to cold, more readily excites Attention than a gradual.
(4) Duration of stimulus, a certain minimum being necessary for any Attention at all. (Q. 31, *c* 1.)

But as Attention develops with the development of Mind, it is no longer determined by sense-stimulus, and, passing behind sense-phenomena, becomes the selecting activity that operates in Abstraction.

d. Belief first enters into consciousness in Judgment, and this is the element of Judgment that is wanting to such judgments as are only implicit in earlier processes of cognition. Thus Conception only develops the consciousness of identity or diversity that is implicit in Imagination, but the belief-factor present in Judgment advances this consciousness into the region of explicit fact. (Q. 36 *c.*)

Similarly, Belief in Testimony is the subjective side of the objective judgment that such testimony is true, this judgment depending partly on the character and capacity of the witness or witnesses, and partly on the nature of the testimony.

e. The subject-matter, both of Belief and Knowledge, is the content of the judgment, but while Belief looks at it subjectively, Knowledge looks at it objectively. Hence Belief comes to mean two things:

(1) A state which is short of certainty, because we have not ascertained the objective truth of the content of the judgment; thus we may believe what is not true, though we cannot be said to know it. In this sense, Belief has been called the genus, of which Knowledge is the species, for we believe all that we know, and more besides. But when a truth, though certain objectively, is not easy to conceive subjectively, *e.g.* that the earth goes round the sun, we may be said to know it rather than to believe it.

(2) A state transcending objective certainty; thus we believe the intuitions of Mind, *e.g.* that every event has a cause, though, as conditions of experience, they do not admit of empirical proof.

QUESTION 38. **What do you understand by Intuition? Can we account for our apprehension of an External World by only postulating sensory data?**

a. Intuition is that activity of Mind whereby we apprehend the conditions of experience, *i.e.* the factors of Knowledge which are furnished by Mind, and not given to it. The validity of these factors in a system of Knowledge is a problem of Metaphysics; the way in which we learn to apprehend them is a problem of Psychology. The principal intuitions are those of Self, the External World, Time, Space, and Cause.

b. The chief Theories of Intuition are:

(1) The Intuitionist View, that intuitions are the initial data of experience; they are

moulds of Mind into which all experience is run, and though they do not constitute knowledge, shape it when empirically acquired. But this, of course, does not imply that they rise earliest in consciousness, or that they are recognised as mental data by the untrained intellect.

(2) The Empirical View, that they are ultimate products of the analysis of experience, and may perhaps be even further analysed into nothing but sensation and possibility of sensation.

But they are not abstractions from experience; they are just what we cannot abstract from experience, though we can abstract all experience from them; they can be predicated not only of all actual knowledge, but also of all possible knowledge.

c. The Intuitionist Theory of the External World is, that Objectivity is given by the mind in Perception, and cannot be further explained. From the Relativity of Knowledge (Q. 41) it follows that, with our present mental constitution, we cannot help believing in an objective world that is independent of us, whether it really exists or not; a present object of Perception is to us a matter of fact which can neither be disproved nor further demonstrated, for we cannot go behind Consciousness of Sensation.

d. The Empirical Theory of the External World is that by an object we originally mean a group of permanent possibilities of sensation, and that because these possibilities, as distinguished from actual sensations,

(1) are permanent instead of being fugitive,
(2) are common to others instead of being peculiar to ourselves,
(3) act as cause and effect independently of our consciousness of them,

we, therefore, come to regard them as having an objective existence, and not as being subjective creations of Mind.

The objection to this theory is that, in accounting for externality, it assumes externality; for

(1) by 'possibility,' we mean external cause;
(2) by referring a sensation to the Ego, we imply apprehension of the Non-ego, and this is the point in dispute;
(3) by speaking of 'groups' of sensations, we imply apprehension of co-existence in Space, and thus beg the question.

e. But, however we obtain our apprehension of Matter, we can distinguish amongst its attributes certain qualities which are always attached to it, and others which may be absent. The former are the Primary Qualities of Matter, the latter are the Secondary; the former express the essential connotation, the latter are accidents. All alike are empirically learnt; but if Matter be a datum of Knowledge, and not a product, its connotation must be a datum too.

These Primary Qualities are

(1) Extension and Figure, which we originally learn through the muscular sense, but in developed consciousness apprehend by the eye.
(2) Resistance, which we also learn through the muscular sense, but afterwards

apprehend by Touch. For by sensations of Resistance we mean sensations of muscular contraction unaccompanied by sensations of motion through empty space, and as all sensations of Resistance are attended by sensations of touch, an inseparable association grows up between them, and the latter become representative of the former.

QUESTION 39. **Discuss the Empirical Theory of Mind. In what way is the Theory of Evolution applicable to the points at issue?**

a. The Empirical Theory of Mind explains it as a permanent possibility of conscious states, a series of feelings *plus* a permanent possibility of feelings. The objections to this Theory are:

(1) The analysis of Memory shows that this series of feelings must be aware of itself as a series in the past, and Expectation shows that it anticipates its continuance as a series in the future.

(2) A permanent possibility of feelings is passive, and cannot account for the associating, comparing, and unifying activities of the Ego.

(3) The Non-ego, defined as permanent possibility of sense-feeling, becomes part of the Ego instead of being contrasted with it.

But this the upholders of the Empirical Theory would admit, maintaining that the Ego is sense-feeling subjectified, and the Non-ego is sense-feeling objectified.

b. Mind, then, is not the sum of our conscious states, but a permanent continuum that underlies them, and they are only the transient manifestations of its activity. Mind, however, is more than Consciousness, for
  (1) Memory implies the retention in Mind of what is not at the time in Consciousness.
  (2) In developed Association we mentally leap from point to point without being conscious of the intervening stepping-stones, unless we deliberately attend to the whole process.

c. The Theory of Evolution, while defining Mind as the capacity of experience, would account for its activities by a reference to heredity. Thus
  (1) each individual starts with the hereditary tendencies of the race, *e.g.* a predisposition to use visual symbols for the perception of distance;
  (2) these tendencies, *plus* the individual basis, are modified and developed in accordance with the physical and social environment in each case;
  (3) certain nerve processes, survivals of the fittest by natural selection, have so often been connected by our ancestors, that we naturally connect them too, and one or two chance tries rivet the connection for us in perpetuity. This is the physiological basis of the Laws of Association.

QUESTION 40. **How do we acquire our apprehension of Time, Space, and Cause?**

a. Time, as the underlying continuum of our successive states, is a datum of self-consciousness; though the states are sensations, our apprehension of them as successive is not a sensation.

We probably first become directly conscious of Time, when, after we have learned to associate two sensations or groups of sensations, an interval occurs between them.

b. Space is a datum of Perception involved in the consciousness of muscular sensation; the idea of Space is not given to the mind in Sensation, but is furnished by the mind in the interpretation of Sensation.

We first become directly conscious of Space when we simultaneously touch two objects and then sweep the arm from one to the other.

c. Thus Time is the infinite possibility of Self-consciousness, and Space the infinite possibility of Perception, and both find a common starting-point in the Ego which is both here and now; all three are given in Perception and abide with us as intuitions apart from Perception.

But we do not gradually get to know them, as we get to know empirical knowledge; we do not learn them, but only discover that we possess them, and that discovery, once made, admits of no addition to it.

d. The Empirical Theory defines a cause as a uniform unconditional antecedent; experience shows us that certain causes are always followed by certain effects, and by an inseparable association we come to feel that they must always be so followed. And as all explained facts are explained by assigning a cause, we necessarily come to think that there is nothing without a cause. Experience proves the fact; Association generates the idea.

The main objections to this Theory are:

(1) The word 'unconditional' (introduced to explain why uniform succession of joint-effects, as that of night and day, is not confounded with cause and effect) surrenders the whole Theory, for it admits a new element in causation besides that of succession in Time.

(2) Conditional sequences, as that of night and day, were never regarded as cause and effect when they were supposed to be unconditional.

(3) Succession in Time is not of the essence of Causality, except in that we apprehend cause and effect in the necessary shape of successive ideas; moreover, we cannot definitely fix the time-boundaries of many causes, *e.g.* the attraction of the moon as causing the tides.

(4) Explained facts are insignificant in number compared with unexplained; hence Association would rather generate the idea that no event has a cause.

(5) Applied Causality in the Physical Sciences is couched in terms of force and energy which cannot be translated into the language of uniform succession.

e. The Intuitionist theories of Cause are:

(1) Causality is an ultimate kind of Force of which we first become conscious in Willing as resulting in muscular action. But

(*α*) We only learn empirically that Willing does result in muscular action; the paralytic has to be taught by experience that, however much he wills, no muscular action results.

(*β*) An intuition of Power only explains why we should have any effect rather than none, not why we should have one effect rather than another.

(2) Causality is given in the intuition of the Ego in Perception. For the Ego has been shown to be not only the passive recipient of sensations, but an attending, associating, comparing and unifying activity, throwing itself into the realm of phenomena rather than letting phenomena flow in upon it. And when we speak of objective causality, we are transferring this determining power of the Ego into the sphere of the Non-ego, and in fact commence the process in the act of perception, for in referring a sensation to an object we regard the object as the cause of the sensation.

QUESTION 41. **What do you understand by the Relativity of Knowledge? How does the acceptance of the Theory affect the basis of (*a*) Knowledge, (*b*) Morality?**

a. The term has been held to cover two meanings, of which the second is the more usual one:

(1) Relativity of the thing known to other things; thus all knowledge is relative, because we cannot think of white apart

from non-white, and so forth. In fact, if this were not a law of knowledge, no knowledge would be possible; we should not be conscious of heat, if all temperature were even, or of colour, if all colour were white.

(2) Relativity to the knower; that is, things are to us only as we know them, and our intuitions are not properties of things in themselves, but only of our mode of knowing them. For all Thought rests ultimately on Perception, and Perception is only a mode of consciousness; and though by interrogating the Perception of numerous individuals we can eliminate abnormal forms of sense-perception, such as colour-blindness, we do not secure ourselves against the possibility of universal error.

b. But the Theory (in the second sense) is not a real restriction on the range of our knowledge, for

(1) Knowledge of the absolute, which is all that it debars us from, is a contradiction of terms; for knowledge means that we enter into intellectual relationship with that which we know.

(2) The converse is true, that we are relative to knowledge; we may have senses and mental activities of which we are not cognisant, because there is no appropriate stimulus.

(3) The theory embraces indiscriminately all forms of knowledge, and is therefore no special bar to any mode of cognition;

scepticism in denying all knowledge denies none.

c. All knowledge is thus reduced to subjective forms of thought which are no guarantee of objective reality; we cannot tell whether our Thought is an intuitive apprehension of what is, or merely supplies us with illusory attributes of what is not. If moral law is regarded as an intuition of conscience, we are bound to take the former view; if it be reduced to empirical considerations of utility, we shall probably adopt the latter; the validity of moral intuitions is bound up with that of intellectual.

QUESTION 42. **Define Feeling in relation to Physical Expression, Pleasure, and Knowledge. Can we formulate a Theory of Pleasure and Pain?**

a. Feeling is subjective consciousness, and deals with sensations as sources not of knowledge, but of pleasure and pain. But pleasure itself is an ultimate state of consciousness, and can only be defined as a kind of feeling which stimulates us to actions that tend to produce or sustain it.

b. Feeling naturally manifests itself in certain universal forms of bodily expression, such as blushing, weeping, arching the eye-brow, curling the lip; and, to a certain extent, by controlling the expression we can control the feeling. But we cannot classify the feelings on this objective basis, for

(1) The same expression stands for different feelings; there are tears of joy as well as of grief.

(2) The objective test for the most part fails us in the more universal feelings, *e.g.* Love of Beauty, Reverence, and so forth.

c. The two main Theories of Pleasure and Pain are

(1) That pleasure is the consciousness of a mental state which is stimulated to its normal limit, this limit varying in the case of each state and each individual, while pain is the natural concomitant of such states as either do not reach or overpass this limit.

Illustrations. Thus it is held that a sour taste, a surfeit of brilliant colours, a very rough surface, over-stimulate the sensory nerves, while an insipid taste, a surfeit of pale tints, a very smooth surface, afford insufficient stimulation.

Objections. But this Theory does not even attempt to prove its case outside the sphere of sense-feeling, and is inadequate within that sphere; it cannot explain, for instance, why the smell of a rose is pleasant and that of assafœtida unpleasant, throwing the onus of proof on the physiologist.

(2) That states of pleasure involve an increase, and states of pain a decrease of the sum of the vital functions. This is called the Law of Self-Conservation, and is put forward as explaining why we desire the pleasant (Q. 44 *b*).

Illustrations. Thus laughter, we are told, is energetic, but grief languid; in joy the muscles are excited, in pain relaxed.

Objections. But this Theory seems quite untenable, for.

(*a*) Pleasure produces not increased vigour but satiety.

(*β*) Pain, so far from lowering vitality, is the great stimulant.

(*γ*) Abatement of vitality is the main source of luxurious or massive pleasures.

d. Feeling is the pre-requisite of all cognition, for it is the subjective side of knowledge. And the feeling of Wonder has even been called the mother of knowledge, for without it we should not be impelled to that analysis of Experience which constitutes Thought; and certain states of eager excitement are natural concomitants of vigorous intellectual acquisition. So, too, all feeling that seeks to realise itself in action casts about for a means to that end and thus promotes Thinking.

But a too violent stimulus of any feeling, and even an adequate stimulus of the organic and less intellectual feelings (Q. 43), is a bar to Thought. And in relation to sense-feeling it has been maintained that Feeling and Thinking are in inverse ratio; for the basis of Thought is Sensation objectified in Perception, and sensations that are intense as feelings are less accurately objectified than those that as feelings are indifferent.

QUESTION 43. **What are the difficulties of classifying feelings? How would you classify them (*a*) as the subjective side of developing consciousness, (*b*) in relation to action?**

a. The difficulty of classifying feelings lies in the fact that, as contrasted with forms of cognition,

- (1) they are subjective states, and therefore more obscure and less easy to test,
- (2) they are more variable and evanescent,
- (3) they are more intermingled with each other and with volitional states,
- (4) complex feelings are harder to analyse than complex cognitions,
- (5) no system of classification includes them all without cross-division.

b. If we classify them according to the development of consciousness, we have, approximately,

- (1) Sensuous feelings, such as are objectified in Perception.
- (2) Organic feelings or Appetites, *e.g.* hunger and thirst.
- (3) Personal feelings, *e.g.* Fear, Shame, Love of Fame.
- (4) Social feelings, which are
  - (*a*) Benevolent, *e.g.* Sympathy, which is a feeling for the pleasures and pains of others, conditioned by our
    - (i) attention and observation of others,
    - (ii) interpretation of the expression of their emotions by our own subjective experience,
    - (iii) constructive imagination.
  - (*β*) Malevolent, *e.g.* Envy and Jealousy.
- (5) Universal feelings or Sentiments proper; these are
  - (*a*) Intellectual, connected with the apprehension of Truth, *e.g.* Wonder. Wonder has reference to the unknown, and must be distinguished from Surprise, which has reference

apprehend by Touch. For by sensations of Resistance we mean sensations of muscular contraction unaccompanied by sensations of motion through empty space, and as all sensations of Resistance are attended by sensations of touch, an inseparable association grows up between them, and the latter become representative of the former.

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c. The Theory of Evolution, while defining Mind as the capacity of experience, would account for its activities by a reference to heredity. Thus

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But we do not gradually get to know them, as we get to know empirical knowledge; we do not learn them, but only discover that we possess them, and that discovery, once made, admits of no addition to it.

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(5) Applied Causality in the Physical Sciences is couched in terms of force and energy which cannot be translated into the language of uniform succession.

e. The Intuitionist theories of Cause are:

(1) Causality is an ultimate kind of Force of which we first become conscious in Willing as resulting in muscular action. But

(2) Desire is not for pleasure but for the satisfaction of a want. It has been analysed into a sense of want, a consequent restlessness and a longing for satisfaction, and this satisfaction may or may not be accompanied by pleasure (Q. 50 *a*).

(3) It really identifies Will with Desire; for Desire itself is more than a vague feeling of want, and seems to imply cognition of some means of satisfying such feeling.

But while Desire is in its essence feeling, Will is in its essence a personal activity manifesting itself in self-determination and self-adjustment. And when Will is developed, we often only desire because we will, or sometimes in the case of habit seem to will without desiring at all.

d. Habit is a form of volition, and has been defined as a fixed disposition to do a thing, *plus* a facility in doing it which is the result of repetition. But it can only perhaps be called voluntary so far as it is alterable by volition; as a rule, for instance, we read and walk automatically and are unconscious of willing the means to the end.

Disposition, however, is a wider term than Habit, and may be defined as a sum of habits modified by motive and environment. Mood, which falls under Feeling rather than Volition, is Disposition regarded from a more subjective and emotional point of view. Character is the sum of the dispositions.

QUESTION 45. **What is the Problem of the Freedom of the Will? Discuss the arguments for and against the Free Will Theory.**

a. The Determinist Theory is that in the act of choice the mind is determined by character and motives, that these two exhaust the Ego, and that we are merely the stage on which they play their part. A volition is a moral effect determined by moral causes, *i.e.* antecedents, just as a physical effect is determined by physical causes.

The Libertarian Theory is that character and motives are merely data of the problem, predicates of an Ego which they do not exhaust, and that above them stands the Causal Self, which weighs and estimates them and makes the decision.

b. The arguments for the Determinist View are:

(1) We regard every other phenomenon as caused; why should we find in Volition an exception to an otherwise universal rule?

Reply. Free Will assigns to the volition an adequate determining cause in the Causal Ego, which is, in fact, the original ground of our perceiving any Causation in Nature (Q. 40).

(2) We habitually predict the actions of others from character and motives.

Reply. Such acts are either

(*a*) habitual acts which are no longer preceded by conscious volition, though still preventible by an exercise of Will, or (β) single-motive acts, where there is no scope for the selective activity of Will, or

(γ) acts of choice, which are alone to the point; but out of two possible courses, one may be repeatedly preferred, and the mind may use its freedom by acting uniformly just as much as by breaking uniformity.

(3) Statistics show that in men's actions there is no irregular intrusion of the Causal Ego; we can predict the number of suicides and so forth.

Reply. This we should expect, for the conflicting results of free wills neutralise each other.

(4) Punishments, as well as praise and blame, proceed on the assumption that the Will is determined by motives, and persons not amenable to motive are not punished; the fear of punishment is thus the great deterrent motive in social life.

Reply. Punishment is only incidentally a deterrent motive; its essence is a sense of retrospective justice which awards to each act its due. For

a) We are conscious of good and ill desert, *i.e.* we praise and blame ourselves, quite apart from the praise or blame of others.

(β) If the only object of punishment were to deter, then punishment should be increased in proportion to the strength of the temptation to do wrong, whereas the reverse is usually the case.

c. The objections to the Determinist View are:

(1) The Theory of Motives is tautologous; it says that the strongest motive prevails, when the only test of its being the strongest lies in the fact that it does prevail; if we decided for the weakest, we should still call it the strongest.

Two forms of reply are open to the Determinist:

(*a*) The strongest motive is the impulse to the greatest pleasure. But there is no satisfactory test by which we can measure pleasure (Q. 51 *b*).

(*β*) The strongest motive is that which habitually prevails; it is not tautologous to speak of the heaviest weight, though the only test of its heaviness lies in the fact of its pulling the lighter ones down. But the analogy is not perfect; the same motive, according to our shifting moods, sometimes carries great weight, and sometimes none.

In fact, the action only follows the motive, because the motive is what we prefix to the act; the selecting Will, in choosing the motive that it will follow, also chooses the act.

(2) The Theory of Caused Volition lands us in a *regressus ad infinitum;* for if a cause be only an antecedent, and the motive causes the act, then a cause is required

for the motive, and a cause for the cause of the motive, and so forth.

Two replies are again open to the Determinist:

- (*a*) He may admit a First Cause without conceding similar causal power to the selecting Will.
- (*β*) He may simply plead ignorance of commencement, and assume the collocation of circumstances at any given time as a starting-point.

(3) Determinism means Fatalism. The reply to this argument is:

- (*a*) If Fatalism be a theory that our actions are overruled by destiny and do not depend on our motives, then the objection breaks down at once.
- (*β*) If Fatalism means that our character is fixed and determines the relative strength of a motive to us, then Determinism replies that character itself is the product of past volition, and is capable of gradual alteration by means of present and future volition.

d. The arguments for the Libertarian View are:

(1) In the act of choice we are directly conscious of being able to choose either of two alternatives.

Replies. (*a*) We are only directly conscious of present mental states; what we are able to do, we only know by experience.

But may we not be conscious of a feeling of ability, though that feeling be conditioned by past experience?

(β) Our conviction is only to the effect that we could choose either alternative, provided it had the preponderance of motive on its side.

But may not our own determination supply such a preponderance?

(2) In Deliberation, which is comparison of motives, there must be some one to compare; if character and motives are the competitors, who is the judge? The phenomena of volition are inexplicable, unless there be a Causal Self that decides.

(3) If man is not a free agent, he is not responsible for his actions, and has no moral personality; Free Will is the basis of Ethics. Obligation presupposes freedom, 'you ought' implies 'you can'; we would neither praise and blame others, nor feel elation and remorse ourselves, if we could not help doing the right and wrong that we do.

Replies. (*a*) Our sense of responsibility is due to an inseparable association between doing wrong and getting punished for it; if others did not punish us, we should have no idea of personal responsibility.

But this implies the Determinist Theory of Punishment (*v. sup.*), and is open to other objections (Q. 53 *c*).

(β) The Determinist trains his character so that only right motives shall have weight with it, and, being responsible for his character, is thus responsible for his actions.

But this again seems to imply a *regressus ad infinitum*; for if he be not free, what determines him to train his character?

PART III.

ETHICS.

QUESTION 46. **What is the scope of Ethics? Define the principal terms in use in Ethical Theory, distinguishing between Motive and Intention.**

a. Ethics is the science of what ought to be in human conduct, all other sciences (except Politics) dealing with what is. Ethics, however, dealing with the individual, has a wider scope than Politics, for
  (1) Legislation must act by punishment, and punishment is itself a greater evil than many which are breaches of moral law.
  (2) Legislation must define offences, and some breaches of moral law do not admit of exact enough definition to give certainty to punishment.

b. The fundamental conception of Ethics is, therefore, that of moral law. Thus
  (1) Rightness is the quality of an act done in accordance with moral law.
  (2) Obligation, or Oughtness, or Duty is the necessity of the agent to act in accordance with moral law.
  (3) Virtue is activity in accordance with moral law; duties, as opposed to virtues, are concrete moral acts demanded from us in accordance with our obligation.

(4) Goodness is the sum-total of the products of moral activity.

(5) Merit is obedience to moral law, and is conditioned by the effort which obedience costs. Thus merit increases, but virtue decreases, in proportion to the intensity of the struggle to do right, and the intensity of the struggle is determined by the relative strength of competing impulses, which are morally discordant.

(6) Guilt is the correlative of merit; when the merit of doing right is greatest, the guilt of failing to do right is least, and *vice versâ*.

c. The motive is the impulse that determines the Ego; the intention is what is determined by the Ego. Thus the motive may be good and the intention bad, as when an inquisitor persecutes a heretic from a compassionate impulse to secure his welfare. Or the motive may be bad and the intention good, as when a man rescues another from drowning to secure a pecuniary reward. Roughly speaking, we look to the motive in estimating the moral worth of the agent, and to the intention in estimating the moral worth of the act.

The term 'motive' is, however, sometimes used to designate the end in view; the intention is then either confounded with the motive, or restricted to the means in view, or held to be a generic term that includes both end and means.

QUESTION 47. **What are the main forms of Ethical Theory? How far do they rest on a psychological basis?**

a. The content of moral law is the standard of right and wrong, but we may regard that law as
  (1) Incapable of further analysis, and valid because of our intuitive apprehension of it; this is Intuitionist Ethics.
  (2) The expression of the highest good or moral end, so that it can be deduced from one fundamental principle by which all the others may be tested; this includes as many forms of Ethics as there are fundamental principles. If such a principle be regarded as a moral intuition, we have a new form of Intuitionist Ethics; if it be regarded as the product of experience, we have a form of Empirical Ethics.

It is impossible to avoid cross-division so long as we are bound to include two *fundamenta divisionis*, a distinction in the ends themselves, and a distinction in the means of apprehending those ends.

b. Intuitionist Ethics includes two main systems, both of which rest their validity on the authority of conscience, and on the psychological basis of the intuition of a permanent, active, self-determining Ego, which is not the sum of its mental states, but the controlling subject of them:
  (1) The Intuitionist Theory of Motive; this regards morality as predicable not of the conduct, but of the character of the

agent, and as being conditioned by the preference he gives to higher motives or springs of action; conscience is the faculty which intuitively recognises the relative rank of two motives.

(2) The Intuitionist Theory of Conduct; this regards the basis of morality as consisting of a series of ultimate principles of conduct; conscience is the faculty which intuitively recognises a moral principle as ultimate.

c. Of the systems which regard the right as analysable into something else, the principal is Hedonism, which identifies the right with the pleasant, and makes Happiness the moral end; its upholders usually rest it on the Empirical Theory of Psychology, which reduces intuitions to abstractions from experience, the Ego to the sum of its conscious states, desire to the impulse for pleasure, and the Will to the position of registrar of the strongest motive as measured in the scale of pleasure and pain.

Hedonism has two main forms, but the connection between them is little more than verbal:

(3) Egoistic Hedonism or Egoism, which regards each individual's own happiness as his end.

(4) Universal Hedonism or Utilitarianism, which regards the greatest happiness of the greatest number as each man's end; but it will be shown to be impossible to deduce this form of Hedonism from empirical principles (Q. 50 *b*), and its only adequate basis is the intuition of Benevolence.

d. By analysing the sense of right not into a form of desire, as in the case of Hedonism, but into a mode of cognition or of æsthetic emotion, we get two further forms of Ethics:
   (5) Intellectual Ethics; the right is the true.
   (6) Æsthetic Ethics; the right is the beautiful.

e. By adding the conception of Evolution as applicable to the individual or the race, we get two final forms:
   (7) Hegelian Ethics; self-realisation of the individual is the moral end.
   (8) Spencerian Ethics; the development of the social organism is the moral end.

QUESTION 48. **What is the Intuitionist Theory of Motive? Discuss the objections that may be brought against it.**

a. The stages of this Theory are:
   (1) The object of moral judgment is not the act but the agent, and in judging the agent we concentrate attention on the thoughts and feelings that manifest themselves in the act, *i.e.* on the motive or spring of action; for when we discover that we have mistaken the motive of a man's conduct, we alter our judgment of that conduct.
   (2) The genesis of Ethics is therefore in ourselves, when two simultaneous springs of action appeal to the Ego, which is compelled to choose between them; as soon as this occurs, we have an intuitive consciousness that one is higher than the other in the scale of moral worth, and this intuitive sensibility to moral gradations is conscience.

(3) By gathering up these separate intuitions, we are enabled to classify springs of action according to their moral worth; roughly speaking, we find that secondary springs (Q. 43 *c*) are lower than primary, and that while the passions and propensions are lowest, the affections and sentiments are highest in the scale.

b. The objections to this Theory are:

(1) It removes conduct from the sphere of morality; for, though we append to the Theory a Canon of Consequences, which shall form the standard of right conduct, yet that canon does not come into play until we have to decide in what way we shall give effect to the higher motive, or unless two motives are equally balanced.

But the moral worth of the motive does not imply that of the act, and according to this theory a bad act done from a higher motive is better than a good act done from a lower motive; if, however, a man who, prompted by compassion, is going to a meeting for the relief of the poor, on the way sees his cook drowning, and is only moved by gluttony to save him, he would surely be right in following the lower motive and saving his cook.

Reply. Possibly we may distinguish between the rightness of the agent and the rightness of the act; in the given instance the act would be right, but the agent wrong.

(2) It destroys the conception of absolute right; a spring of action may be right one minute, when compared with a lower one, and wrong the next, when compared with a higher one.

Reply. On the other hand, it does not admit of degrees of right and wrong; so long as a motive is right, it is absolutely right.

(3) It only adds complexity to moral problems; we do not get rid of the necessity of explaining justice by speaking of the impulse to be just.

Reply. Conscience may recognise the impulse to be just as the higher or lower of two simultaneous motives, without being able to analyse it.

(4) The impossibility of adequately comparing or classifying motives; if conscience is to judge which is the higher of two impulses, am I to follow my own conscience when it conflicts with that of the majority?

Reply. In essential points there would be no conflict.

(5) The impossibility of reading motives, especially as we generally act from mixed motives; if A, B, C, D are motives arranged in order of worth, is AD higher than BC?

Reply. Conscience gives us intuitive knowledge of the worth of our own motives, which is the essential point, whether simple or compound. And though motives, being internal stimuli, are less easily distinguished from each other than concrete acts, their indistinctness has nothing to do with the intensity with which they are felt.

(6) The Theory would require us always to act from the highest possible motive; but life on so exalted a plane is impracticable.

Reply. It only requires us to act from the higher of two simultaneous motives. Still it might be expected to insist on our choosing that environment in which the highest motives will be likely to appeal to us most frequently.

QUESTION 49. **What is the Intuitionist Theory of Conduct? How does it account for the diversity of moral judgments?**

a. Moral intuitions are general principles of conduct intuitively known, and are presupposed in the fact of moral consciousness just as the intuitions of knowledge are presupposed in cognition; they are the conditions of moral experience.

b. The following is Dr. Calderwood's list of such intuitions:

(1) Intuitions of individual life, relating to ourselves: Self-development, Industry, Temperance, Purity.

(2) Intuitions of social life, relating to others: Justice, Benevolence, Truthfulness, Fidelity.

(3) Intuitions of the higher life, relating to the Deity: Reverence, Love, Obedience.

But Lotze finds only one main intuition, that of Benevolence, and the same view is taken by those Utilitarians who rest their system on an intuitive basis.

c. The characteristic marks of such intuitions are held to be:

- (1) Their universality; they hold good everywhere, at all times and under all circumstances.
    - *Reply.* There are many cases when they appear to conflict; the man who tells a lie to save a friend's life (Q. 56 *e*), abjures Truthfulness in order to give effect to Benevolence.
- (2) Their necessity; without such principles as major premisses, we could not come to any moral conclusion.
    - *Reply.* A shorter list would serve the purpose; Utilitarians deduce the whole of morality from only one principle.
- (3) Their self-evidence; their validity is acknowledged as soon as they are understood.
    - *Reply.* As soon as we put any definite meaning into most of them, *e.g.* Justice and Benevolence, we find very considerable divergence of views.
- (4) Their unquestionableness both as intellectual truths and practical principles:
    - (*a*) Intellectually, we cannot conceive the opposite as true, *e.g.* that Justice is wrong.

Reply. This test is only empirical, as shown in Q. 24 *b*.

(*β*) Practically, we cannot conceive the opposite as holding good, *e.g.* that all men should lie.

Reply. This is only because the opposite would lead to disorder and unhappiness; so here we find the Intuitionist consulting consequences, and adopting the Hedonist's standpoint.

d. A moral judgment is, therefore, the comparison of a particular act with a moral intuition, a particular application of a universal principle; and, being a judgment, it is not ethically right or wrong, but intellectually true or false. Hence the diversity of moral judgments, for

(1) Though the major of the moral syllogism is always the same, the minor varies with each individual; 'Just conduct is right never alters, but 'This is just conduct,' may be erroneous.

(2) The major, though formally the same, is constantly being more fully interpreted.

(3) The minor, though not true in itself, may yet be justified by a regard for consequences; thus we reward the accomplice, which is in itself unjust, in order to be able to punish the criminal, and so secure a greater surplus of justice than if we had taken no action at all. Hence this Theory, as well as the preceding (Q. 48), is bound to consult consequences in giving effect to its intuitions.

(4) Moral sentiment attaches itself as readily to a false moral judgment, as to a true one.

QUESTION 50. **What is the basis of (*a*) Egoism, (*b*) Utilitarianism? Can the latter be deduced from the former?**

a. Egoism or Egoistic Hedonism starts with the assumption that all desire is for one's own pleasure, and that an empirical acquaintance with pleasure precedes all desire; hence the only original spring of action would be self-love.

The objections to this view are:

(1) The personal affections and other springs of action (Q. 43 *c*) are at least as original in their germ as the self-seeking desires. The human infant has instinctive propensions, passions, and affections just as much as the animals, and, like them, desires the satisfaction of such instincts before any empirical acquaintance with their pleasurable or painful consequences.

Reply. The instinctive impulse is spontaneous, but as soon as we know whither it leads, we form a conception of the pleasantness of its realisation, and this conception becomes the object of desire; thus we desire the satisfaction of the appetites, because it is inseparably associated with the pleasure that normally results.

(2) We desire the right apart from the pleasant.

Reply. Originally we merely desire the right as a means to the pleasant, and it is only by a process of association that the right finally becomes an end in itself, just as a miser desires money apart from the things that it will buy. But see Q. 50 *b*, 3.

(3) Desire is not proportioned to pleasure; we often desire the lesser pleasure.

Reply. In some cases this is because the thing desired has by association acquired a value independent of the resultant pleasure; in other cases we desire the less intense pleasure because it is more immediate or more certain or more durable; or, again, a man may desire a lower and therefore lesser pleasure, because it is the highest that he is capable of appreciating.

(4) Pleasure is not proportioned to desire; we get most pleasure when we do not consciously strive for it.

Reply. This is a fundamental law of all emotion, any form of which is less intense as a feeling in proportion to its distinctness as an element of cognition (Q. 42 *d*); but though the law constitutes a practical difficulty in the application of the Hedonist principle, it does not affect this psychological basis.

But even if we grant that all desire is for pleasure, it does not follow that pleasure is desirable; a proof that it is desired, does not prove that it ought to be desired. And Ethics is not the science of what is, but of what ought to be.

b. Utilitarianism is usually regarded as resting on the basis of Egoism:

- (1) The argument runs: Each man's happiness is his own end, therefore the common end is the happiness of all men, and an action is right or wrong in proportion as it does or does not promote the greatest happiness of the greatest number. But this is clearly a fallacy; for the fact that A's happiness is A's end does not prove that A's happiness is B's end.
- (2) Hence it is usual to supplement this argument by trying to prove that to seek the pleasure of all is the best way of securing one's own; if we promote the happiness of others, then
  - (*a*) we enable society to continue; if all men were to act on the principle of not promoting the happiness of others, common life would be impossible;
  - (*β*) we induce others to promote our happiness;
  - (*γ*) we obtain the emotional satisfaction (Q. 51 *a*, 1) attendant on disinterested action.

But to so general an argument it seems sufficient to reply that, though pleasure does follow on right conduct, we feel that such conduct is pleasant because right, and not right because pleasant.

(3) Hence it is more specifically urged that actions which do not arise from our own self-interest are originally forced upon us by the joint self-interest of our fellows, who stimulate disinterested action by praise and rewards, and check the reverse by blame and punishments; and that by the Law of Inseparable Association we have not only forgotten the origin of disinterested action, but have adopted the standard of others as our own.

Reply. (*a*) We judge ourselves before we judge others, and intuitively know that an action is wrong before we are blamed for it; in praising or blaming others we merely re-echo their own feeling of right and wrong.

(*β*) Why should others, if they adopt the egoist standpoint, praise benevolent action, when in the next case they may just as likely be benefiters as benefited?

(*γ*) They should applaud most when there is a dearth of benevolent conduct; and when unselfishness is most prevalent, it should be praised least. But the reverse is the case.

(*δ*) They should praise most highly when a man confers the maximum of pleasure at the minimum of self-sacrifice; whereas the opposite holds good.

As, therefore, Utilitarianism cannot be deduced from Egoism, and is, in fact, inconsistent with it, we must either regard the utilitarian principle as giving expression to a fundamental intuition of Benevolence, or as the test and index-hand of an ethical end, *e.g.* the Will of the Deity, otherwise undefinable.

QUESTION 51. **What are the objections to the general principle of both forms of Hedonism, and the difficulties of applying it in practice?**

a. The general principle of Hedonism is the identification of the right with the pleasant. The objections to such an identification are:

(1) It allows no scope to original instincts and disinterested springs of action.

Reply. As soon as an association has been formed between a primitive impulse and its realisation, we cannot help its realisation becoming to us an end; and so in disinterested action we cannot help knowing that we shall satisfy the capacity for

(*a*) æsthetic emotion, which in such action recognises the beautiful;

(*β*) the emotion of sympathy, which finds its own pleasure in pleasing others.

(2) Disinterested action becomes less right than interested action; it is better to do a thing from love of praise than from mere love of right, because in the first case we get the additional pleasure of being praised.

Reply. We lose the pleasure of acting from a sense of duty.

(3) The Theory finds right in the act and not in the character of the agent.

Reply. It takes into account not the actual conduct but the intended conduct, and this it regards as the outward expression of the individual character.

(4) It makes wrong conduct a mere error in calculation of pleasures, and we do not feel remorse for a blunder or ascribe to ourselves merit for correct arithmetic.

Reply. The ideas of guilt and remorse are only of later growth, as explained in the Empirical Theory of Conscience.

(5) It regards right not as being something fixed, but as varying with the temperament and circumstances of each individual; what is pleasant in some cases is the reverse in others.

Reply. The right is still distinguished from the pleasant as that part of it which is most fixed and stable; the right represents the most permanent, if indirect, species of happiness, the expedient stands for those which are temporary and immediate. And if the two conflict, Hedonism, like Intuitionism, bids us prefer the right to the expedient and to disregard immediate pleasurable or painful consequences in order to train a character that shall naturally find expression in conduct which produces happiness.

(6) It takes no account of the development of human life; pleasure, though the end of sentient life, is not the end of rational life.

Reply. Sentient pleasure is the end of sentient life, and rational pleasure is the end of rational life; in proportion as rational life develops, we become capable of experiencing pleasures that are higher in quality than mere sentient ones.

b. Moreover, granting the principle of Hedonism, we find that it would be impossible to work it out in practice, even if we only take into account the agent's own happiness as measured in pleasures and pains. For

- (1) No pleasure can be represented by a fixed quantity, for
    - (*a*) a lesser pleasure is often, by way of variety, more pleasant than a greater;
    - (*β*) a pleasure that is consciously sought is less pleasant than the same pleasure when it indirectly intervenes.
- (2) Pleasures are incommensurable with each other and with pains, even if we adopt Bentham's tests of intensity, certainty, duration, proximity; how much intensity, for instance, is equivalent to how much certainty?
- (3) Pleasures vary in quality, as Mill recognised, as well as in quantity, but
    - (*a*) if pleasures vary in something else than pleasantness, then they are species of another genus besides pleasure, and pleasure as such is not the only end.
    - (*β*) a qualitative difference cannot be quantitatively expressed.

(4) If we adopt the measurements of others, they can only decide what is pleasant for themselves and not what is pleasant for us. Owing to differences of type, personal preferences, and difficulties of judging, we cannot appropriate their hedonistic experience; the studious man finds his highest pleasure in study, and the active man in exercise, but neither would care for the pleasure of the other.

(5) Pleasures cannot be added unless they are simultaneous; a man with a pleasure of a certain intensity has for the time more happiness than one who has been having a constant succession of pleasures of lesser intensity.

(6) If the required calculations were possible, they would be too cumbrous for the principle to be of practical use.

To this it is replied that our conduct would not be based on the principle itself, but on more specific generalisations deduced from it. But in that case

(*a*) the minor of the hedonistic syllogism, 'This is most pleasant,' would be liable to exceptions (Q. 52 *b*, 2 γ).

(β) it would be determined by what others have found most pleasant, and that need not be most pleasant for us;

(γ) or it would be determined by what we have found most pleasant in the past, and that need not be always most pleasant for us.

QUESTION 52. **What are the special difficulties of (*a*) Egoism, (*b*) Utilitarianism, apart from the hedonistic principle which these systems embody?**

a. The special objections to Egoism are:

(1) The individual, as a moral being, can only be thought of as a member of society; apart from contact with others, there would be no morality at all, and even so-called duties to self are only due to self as a member of the social body.

(2) Egoism can take no account of absolute self-sacrifice for the good of others, and is bound to consider that the martyr who perishes for the good of the race is acting wrongly.

(3) Egoism cannot account for any sort of disinterested action at all, for it has been shown (Q. 50 *b*) to be impossible to deduce the principle of benevolence from that of selfishness.

b. The special objections to Utilitarianism are:

(1) *Psychological.* But the difficulties attached to the identification of the right with the pleasant are of less weight in Utilitarianism than in Egoism; for in desiring virtue we do contribute to the greatest happiness of others, though not always our own, and the very essence of disinterested action is that it shall be done to promote the happiness of others. Hence a utilitarian may consistently abandon the hedonistic psychology which regards one's own pleasure as the end or object of desire.

(2) *Practical.* These are of greater weight than in the case of Egoism; for we have now to estimate acts not only as they affect ourselves, but as they contribute to the happiness of others. So not only are the original difficulties intensified, but we have the following in addition:

(*a*) In reckoning others, is each individual to count as a single unit, or would it not be right to give the preference to friends rather than to strangers, to good men rather than to bad? And if we are to make preferences, is it right to give a lesser pleasure to a good man rather than a greater to a bad?

(*β*) Are we to reckon in the animals, and, if so, how are they to be counted? Is it better to give pleasure to a whole flock of sheep or to a single man?

(*γ*) Granting that the practical formulæ deduced from the utilitarian principle would usually coincide with the intuitional morality, what is a utilitarian to do when they conflict? If, for instance, in cases which we think exceptional, we may rightly abstain from telling the truth or keeping a promise on the ground that we should not be contributing to the greatest happiness, are we not liable to deceive ourselves, and should we not, even if our judgment is right, confound all morality?

Reply. There is hardly a conceivable

case in which the utilitarian would be right in superseding the ordinary rules of intuitional morality; for if he does,

(i) his own happiness, which is part of the general happiness, suffers through social disapprobation;

(ii) he may pull down the old rule, and thereby weaken the whole of the intuitional structure, without establishing his new one;

(iii) the general recognition of any good rule as valid is a strong utility, and the surplus goodness of the new rule must exceed the amount credited to the old on this account.

QUESTION 53. **State the main theories of Conscience, discussing its claim to be considered a Moral Sense, and account for Obligation. What has been the influence of Jurisprudence on Ethics, and of Ethics on Jurisprudence?**

a. The Intuitionist Theory of Motive practically identifies Conscience with a form of emotion; when two simultaneous springs of action present themselves, we have a feeling that one is morally higher than the other, and this is what we mean by Conscience. Hence Conscience may be called a Moral Sense, as being a capacity of feeling in relation to moral worth.

b. The Intuitionist Theory of Conduct regards Conscience as a cognitive faculty which apprehends the ultimate principles of moral law; it is only a Moral Sense if we interpret 'Sense' as meaning an intellectual activity of Mind, just as Perception was once called a sense.

Just as intellectual intuition reveals to us once for all our already existing apprehension of Space and Time, and we do not learn these intuitions from experience, but only discover that we possess them, so Conscience reveals to us our intuitions of the moral law; it cannot, therefore, err, or be educated, or be held responsible for moral judgment or moral sentiment. All error and growth is not on the part of our moral intuitions, but belongs to our application and interpretation of them.

c. The Egoistic Theory of Hedonism and the Utilitarian Theory, so far as it rests on an empirical basis, would not reject the comparison between Conscience and Perception, but would analyse both into a cluster of associated sensations; both, though apparently intuitive, are complex products.

By Conscience, then, this Theory means a feeling of pain attendant on wrong conduct; this feeling, when analysed, resolves itself into the knowledge that for such conduct others would punish or blame us. Hence our moral sentiment is an adoption of public opinion, so that it becomes an internal law; it is an echo of public sentiment in the individual nature.

The objections to this view are:

(1) It assumes that others judge us before we

judge ourselves, whereas we really interpret their moral judgments on us by our own feeling of merit or guilt.

(2) The point of view of the egoist and that of his fellows are opposed (Q. 50 *b*), and, as egoists, we cannot adopt a public sentiment repugnant to our own.

(3) Punishment really originates not as a stimulus to good conduct, but as a retribution for bad conduct (Q. 45, *b* 4).

(4) According to this view, we ought to feel remorse for every error in conduct, and not only for what is morally wrong; Hedonism confounds the blunder and the crime.

Reply. By a crime the utilitarian means a blunder which seriously affects the well-being of society; to such blunders society attaches a heavy penalty, and this is what, in such cases, makes our sense of wrong conduct so acute.

d. Obligation, therefore, which constitutes the authority of moral law, may be accounted for in three ways:

(1) The authority lies in the intuitive character of the faculty which reveals the law. The objection to this view is, that Hedonism analyses Conscience into a feeling of self-interest, and that in any case our sense of right, or at least the use that we make of it, is something which grows and develops.

Hence we have to decide between two alternatives:

- (*a*) The authority of the product is that of its constituents; if Conscience is merely an amalgam of pleasures and pains, then we may defy it as readily as we would the attraction of pleasure or the repulsion of pain.
- (*β*) The authority of the product is above that of its constituents. Just as water, though a compound of two gases, has properties which belong to neither, so Conscience, though it may have grown out of the unauthoritative, yet may itself be authoritative; even if it be an acquired faculty, yet it is quite as natural to man as speech and reasoning, which are also acquired.

  Reply. This is only true if we regard Conscience not as the sum of its constituents, but as an organic development from them.

(2) The authority lies in the character of the law intuitively revealed, especially in its universality (Q. 49 *c*). The objections to this view are:

- (*a*) Conscience does not give a uniform answer on questions of practical morality.
- (*β*) The content of morality is too complex to be revealed by intuition.

The answer to all such objections is, that Conscience does not reveal the content of morality, but the ultimate principles on which morality is based, and we fill up the content of those principles according to our individual education and experience.

(3) The authority lies in the sanction by which moral law is enforced and breach of it punished. Sanctions are classed as

(*a*) Physical, the physiological reaction from bodily excess.

(*β*) Legal, punishment enforced by the laws of a country.

(*γ*) Social, the disfavour of society, especially as expressed in blame.

(*δ*) Internal, the feeling of remorse; the other three are external, and the Hedonist Theory regards the fourth as their product (Q. 53 *c*).

e. The influence of Jurisprudence on Ethics is shown by

(1) The whole conception of moral law, especially the stress laid on authority and sanctions.

(2) The constant efforts of moralists to formulate a complete moral code.

(3) The justification of moral rules on the ground of empirical utility, which is, strictly speaking, the only point of view recognised by Positive Law.

Similarly, the influence of Ethics on Jurisprudence is shown whenever we import into Positive Law considerations that are not based on the results of action, but on character and motive, or attempt to define legal rights and duties from any other than an empirical standpoint.

QUESTION 54. **What are the objections to resting Morality on a purely intellectual or a purely æsthetic basis?**

a. In the first case, we identify the right with the true, and regard our sense of right as a form of intellectual apprehension. The objections to such a view are:

(1) It makes our sense of right a knowledge of what is; but morality is concerned with what ought to be.

(2) Conscience is identified with Reason; but Reason is impersonal, Conscience personal; Reason is untinged by emotion, Conscience, as we know it, absorbed in emotion. The right is not felt because known, but known because felt.

(3) Virtue would have to mean mere intellectual assent to truth, instead of conduct in obedience to it.

(4) The true is absolutely true, the right is only relatively right; actions are not absolutely right or wrong, but one that is preferred to a second, may yet rank below a third.

b. In the second case, we identify the right with the beautiful, and regard our sense of right as a form of æsthetic emotion. The objections to such a view are:

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(2) Our conception of the beautiful is even more vague than our conception of the right, so that we explain *obscurum per obscurius.*

(3) In apprehension of the beautiful we are mainly passive; in apprehension of the right, mainly active. Moral Intuition contains a cognitive factor; we not only feel the right, but perceive it.

(4) If the obligation to 'beautiful' conduct lies in the emotional satisfaction that it affords, then we lapse back into Hedonism.

QUESTION 55. **In what way has the conception of Evolution modified Ethical Theory? Distinguish between moral intuitions and moral instincts.**

a. The Hegelian Theory regards self-realisation, or development of the individual nature, as the moral end. The objections to this view are:

(1) The idea of self-realisation is too vague to form a practical basis of duty.

Reply. It is quite as distinct as the ordinary first principles of Intuitionist Theory.

(2) Self-realisation can only be analysed into self-satisfaction, and that is a very low ideal.

Reply. The higher the nature that is to be satisfied, the higher the ideal.

(3) When the self is realised, then Ethics comes to an end; morality, therefore, ultimately annihilates itself.

Reply. The self that is to be realised is constantly developing; in any case the same difficulty besets all systems of Ethics, for, so far as duty implies conflict, there will be no more duty when man learns to do right without struggling.

(4) Self-realisation is selfishness, and therefore inconsistent with Benevolence or Altruism.

Reply. It is only through Benevolence that the self can be realised as part of an infinite whole; even historically the concept of the family or the tribe is prior to that of the individual.

(5) The Theory cannot account for Obligation, but presupposes it.

Reply. The ideal of self-realisation and the obligation to pursue it rise into consciousness together.

b. The Spencerian Theory regards preservation of the vitality of the species as the end; hence right conduct is such as is conducive to the health of social life. Our sense of right is now an intuition, but was once merely the apprehension of what was pleasant and therefore life-preserving; this power of apprehension has been hereditarily transmitted, and therefore seems to us, because it is innate, of special authority, but is really only a physiological reaction of the empirical judgments of our ancestors.

The objections to this Theory are:

(1) The pleasant is not necessarily life-preserving; the æsthetic pleasures have no such tendency. Though life has developed, that is not because men have desired the pleasant, but because they have followed their instincts.

- (2) It does not account for the facts of moral life, such as obligation and remorse; just as in Biology the Evolutionist Theory leaves a gap between organic life and conscious life, so in Ethics it leaves a gap between sentient life and moral life.
- (3) The standard is impracticable, because we do not know enough sociology to be able to say what is conducive to the health of social life; in any case the standard would vary according to the form of society. For we cannot adopt rules that would suit an ideal society, because
  - (*a*) we are not yet agreed as to what are the features of an ideal society;
  - (*β*) rules that would suit such a society would not suit our own; for at any rate there would be no provision for punishment.

c. A moral intuition may, therefore, be explained in three ways:

- (1) It is antecedent to moral experience, which only reveals to us the fact that we possess it (Q. 40 *c*); if it were the result of Induction, it could merely tell us what is, and not what ought to be.
- (2) It is the product of our own experience of pleasures and pains (Q. 53 *c*).
- (3) It is the product of our ancestors' experience, and innate in us.

d. Every intuition, *e.g.* 'Justice is right,' may be expressed as an imperative, *e.g.* 'Be just,' and in the latter form is assimilated to an instinct; but the essence of an instinct is that it propels

(2) *Practical.* These are of greater weight than in the case of Egoism; for we have now to estimate acts not only as they affect ourselves, but as they contribute to the happiness of others. So not only are the original difficulties intensified, but we have the following in addition:

(*a*) In reckoning others, is each individual to count as a single unit, or would it not be right to give the preference to friends rather than to strangers, to good men rather than to bad? And if we are to make preferences, is it right to give a lesser pleasure to a good man rather than a greater to a bad?

(*β*) Are we to reckon in the animals, and, if so, how are they to be counted? Is it better to give pleasure to a whole flock of sheep or to a single man?

(*γ*) Granting that the practical formulæ deduced from the utilitarian principle would usually coincide with the intuitional morality, what is a utilitarian to do when they conflict? If, for instance, in cases which we think exceptional, we may rightly abstain from telling the truth or keeping a promise on the ground that we should not be contributing to the greatest happiness, are we not liable to deceive ourselves, and should we not, even if our judgment is right, confound all morality?

Reply. There is hardly a conceivable

case in which the utilitarian would be right in superseding the ordinary rules of intuitional morality; for if he does,

(i) his own happiness, which is part of the general happiness, suffers through social disapprobation;
(ii) he may pull down the old rule, and thereby weaken the whole of the intuitional structure, without establishing his new one;
(iii) the general recognition of any good rule as valid is a strong utility, and the surplus goodness of the new rule must exceed the amount credited to the old on this account.

QUESTION 53. **State the main theories of Conscience, discussing its claim to be considered a Moral Sense, and account for Obligation. What has been the influence of Jurisprudence on Ethics, and of Ethics on Jurisprudence?**

a. The Intuitionist Theory of Motive practically identifies Conscience with a form of emotion; when two simultaneous springs of action present themselves, we have a feeling that one is morally higher than the other, and this is what we mean by Conscience. Hence Conscience may be called a Moral Sense, as being a capacity of feeling in relation to moral worth.

b. The Intuitionist Theory of Conduct regards Conscience as a cognitive faculty which apprehends the ultimate principles of moral law; it is only a Moral Sense if we interpret 'Sense' as meaning an intellectual activity of Mind, just as Perception was once called a sense.

Just as intellectual intuition reveals to us once for all our already existing apprehension of Space and Time, and we do not learn these intuitions from experience, but only discover that we possess them, so Conscience reveals to us our intuitions of the moral law; it cannot, therefore, err, or be educated, or be held responsible for moral judgment or moral sentiment. All error and growth is not on the part of our moral intuitions, but belongs to our application and interpretation of them.

c. The Egoistic Theory of Hedonism and the Utilitarian Theory, so far as it rests on an empirical basis, would not reject the comparison between Conscience and Perception, but would analyse both into a cluster of associated sensations; both, though apparently intuitive, are complex products.

By Conscience, then, this Theory means a feeling of pain attendant on wrong conduct; this feeling, when analysed, resolves itself into the knowledge that for such conduct others would punish or blame us. Hence our moral sentiment is an adoption of public opinion, so that it becomes an internal law; it is an echo of public sentiment in the individual nature.

The objections to this view are:

(1) It assumes that others judge us before we

judge ourselves, whereas we really interpret their moral judgments on us by our own feeling of merit or guilt.

(2) The point of view of the egoist and that of his fellows are opposed (Q. 50 *b*), and, as egoists, we cannot adopt a public sentiment repugnant to our own.

(3) Punishment really originates not as a stimulus to good conduct, but as a retribution for bad conduct (Q. 45, *b* 4).

(4) According to this view, we ought to feel remorse for every error in conduct, and not only for what is morally wrong; Hedonism confounds the blunder and the crime.

Reply. By a crime the utilitarian means a blunder which seriously affects the well-being of society; to such blunders society attaches a heavy penalty, and this is what, in such cases, makes our sense of wrong conduct so acute.

d. Obligation, therefore, which constitutes the authority of moral law, may be accounted for in three ways:

(1) The authority lies in the intuitive character of the faculty which reveals the law. The objection to this view is, that Hedonism analyses Conscience into a feeling of self-interest, and that in any case our sense of right, or at least the use that we make of it, is something which grows and develops.

Hence we have to decide between two alternatives:

(*a*) The authority of the product is that of its constituents; if Conscience is merely an amalgam of pleasures and pains, then we may defy it as readily as we would the attraction of pleasure or the repulsion of pain.

(*β*) The authority of the product is above that of its constituents. Just as water, though a compound of two gases, has properties which belong to neither, so Conscience, though it may have grown out of the unauthoritative, yet may itself be authoritative; even if it be an acquired faculty, yet it is quite as natural to man as speech and reasoning, which are also acquired.

Reply. This is only true if we regard Conscience not as the sum of its constituents, but as an organic development from them.

(2) The authority lies in the character of the law intuitively revealed, especially in its universality (Q. 49 *c*). The objections to this view are:

(*a*) Conscience does not give a uniform answer on questions of practical morality.

(*β*) The content of morality is too complex to be revealed by intuition.

The answer to all such objections is, that Conscience does not reveal the content of morality, but the ultimate principles on which morality is based, and we fill up the content of those principles according to our individual education and experience.

- (3) The authority lies in the sanction by which moral law is enforced and breach of it punished. Sanctions are classed as
  - (*a*) Physical, the physiological reaction from bodily excess.
  - (*β*) Legal, punishment enforced by the laws of a country.
  - (*γ*) Social, the disfavour of society, especially as expressed in blame.
  - (*δ*) Internal, the feeling of remorse; the other three are external, and the Hedonist Theory regards the fourth as their product (Q. 53 *c*).

e. The influence of Jurisprudence on Ethics is shown by

- (1) The whole conception of moral law, especially the stress laid on authority and sanctions.
- (2) The constant efforts of moralists to formulate a complete moral code.
- (3) The justification of moral rules on the ground of empirical utility, which is, strictly speaking, the only point of view recognised by Positive Law.

Similarly, the influence of Ethics on Jurisprudence is shown whenever we import into Positive Law considerations that are not based on the results of action, but on character and motive, or attempt to define legal rights and duties from any other than an empirical standpoint.

QUESTION 54. **What are the objections to resting Morality on a purely intellectual or a purely æsthetic basis?**

a. In the first case, we identify the right with the true, and regard our sense of right as a form of intellectual apprehension. The objections to such a view are:
  (1) It makes our sense of right a knowledge of what is; but morality is concerned with what ought to be.
  (2) Conscience is identified with Reason; but Reason is impersonal, Conscience personal; Reason is untinged by emotion, Conscience, as we know it, absorbed in emotion. The right is not felt because known, but known because felt.
  (3) Virtue would have to mean mere intellectual assent to truth, instead of conduct in obedience to it.
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  - (2) It is the product of our own experience of pleasures and pains (Q. 53 *c*).
  - (3) It is the product of our ancestors' experience, and innate in us.

d. Every intuition, *e.g.* 'Justice is right,' may be expressed as an imperative, *e.g.* 'Be just,' and in the latter form is assimilated to an instinct; but the essence of an instinct is that it propels us blindly forward to an unknown end, and as all morality is volitional, such a phrase as 'moral instinct' is, strictly speaking, a contradiction of terms.

Still, we may draw the following distinctions:

(1) The imperative of an intuition bids us *be* something; the imperative of an instinct bids us *do* something.

(2) The intuition becomes clearer by experience; the instinct becomes fainter, until practically all our conduct is either based on habit or consciously directed to an end.

(3) The intuition, as antecedent to experience, is moralised already; the instinct is of itself unmoral, and requires to be moralised by being consciously directed to a moral end. Thus it is that the instinct of retaliation becomes moralised by being brought under the conception of Justice (Q. 56 *d*).

QUESTION 56. **Give some account of Duties and Virtues, analysing our conceptions of Justice and Truthfulness.**

a. Duties may be classified

(1) As relating to the individual, to society, to the Deity (see Q. 49 *b*). But we cannot avoid cross-division, as every duty belongs to all three classes according to that aspect of it which we happen to emphasise. Hence the Hegelian looks at all duty from the first point of view, the utilitarian from the second, the theologian from the

third; but unless all three aspects were possible, the entire concept would be impossible.

(2) According to their sanctions, into two groups:

(*a*) Duties proper or duties of perfect obligation; these are always binding, and are such as could or should be enforced by legal sanctions, *e.g.* Truthfulness.

(*β*) Duties of imperfect obligation; these are equally binding, but the agent may choose the occasion for performance, *e.g.* Gratitude.

b. Duty proper, therefore, signifies what may be rightly exacted from us, and a neglect of such a duty involves a breach of good faith and a disappointment of legitimate expectation. Hence (in relation to man) every duty of imperfect obligation transcends duty proper, just as Benevolence transcends Justice, for no other man has the right to demand more than we are bound to give.

Virtue, however, includes both kinds of duties, and does not emphasise the connotation of obligation.

c. Virtue is defined by Aristotle as the habit of choosing the mean between two extremes; thus, courage is the mean between cowardice and foolhardiness. But

(1) In the scale of right a virtue is not a mean but an extreme; virtue is not a compromise, but the highest activity of a perfect character.

    (2) The mean is not equally opposed to both extremes; courage, for instance, is nearer to foolhardiness than to cowardice.
    (3) The mean does not depend upon the extremes, but the extremes upon it; and in the case of several virtues it is not easy to say what the excess and defect are.
    (4) There is no standard of deciding what is the mean; Aristotle himself makes the man of practical intelligence the standard.

d. The main Theories of Justice are:
    (1) Intuitional: Justice is preference for worth according to an intuitive scale of right. The central idea is that of a judge deciding between two persons according to their deserts; but in ethical problems one or more of these parts is often doubled, and a man may be spoken of as doing justice to himself, when he decides between himself as he is and himself as he might be.
    (2) Empirical: Justice is satisfying the warranted expectations of others. The central idea is the animal impulse of retaliation moralised by a more extended sympathy as to what constitutes a wrong and whose wrongs we should resent; Justice therefore includes all duties of perfect obligation, since a breach of these is a hurt to society.

e. The main Theories of Truthfulness are:
    (1) Intuitional: Truthfulness is unconditionally obligatory, but a lie which saves a man's

life, *e.g.* if spoken to an assassin or by a doctor to a patient, is permissible on the ground that

(*a*) the questioner is outside the pale of moral law;

(*β*) the questioner has no right to demand truth from us.

But we are not told how much utility a lie must possess in order to justify us in adducing either of these considerations.

(2) Empirical: Truthfulness rests on the utilitarian basis that a lie

(*a*) hurts that reverence for truth which, as members of society, we cannot help feeling;

(*β*) tends to make society impossible.

In exceptional cases, however, a lie may be justified on the ground of preponderant utility.

APPENDIX A.

SYLLABUS OF THE LONDON UNIVERSITY PASS B.A. COURSE.

PSYCHOLOGY.

Scope and Method. General Analysis and Classification of Mental Facts. Consciousness; Self-consciousness; Attention.

Sensation and Movement. The Senses. Sense-perception.

Representative Imagination; Memory; Expectation; Laws of Association.

Fundamental processes of Intellect.

Abstraction and Generalisation; Conception, Judgment, and Reasoning. Language as expressive of Thought; Intellectual Construction.

Feeling and its expression. Pleasure and Pain. Emotions and their classification.

Action, Instinctive and Voluntary. Appetite and Desire. Motives; Deliberation; Choice; Freedom of Will.

Belief and Knowledge. Self and External World. Relations of Mind and Body.

LOGIC.

First Principles and Laws of Thought. Logical use of Language.

Terms; Categories and Predicables. Formal Division and Definition.

4. What does the association of ideas presuppose? Trace the working of association and its results, in a single selected instance. How far is it a formative process? (30.)
5. Is the imagination ever useful in a strictly analytic process? Show how it may hinder scientific procedure. (33 *d.*)
6. 'The moral end is self-realisation.' 'Morality consists in altruism.' Compare these ideas. Is it possible to reconcile them? (55 *a.*)
7. What are the inferences as to morality which may be drawn from the principle that the *esse* of things is their *percipi*? (41 *c.*)
8. How far do duties arise out of social relationships, and how far are they purely individual? (49 *b*, 56 *a.*)
9. Virtue has been defined as the habit of choosing the mean between extremes. Critically estimate this definition. (56 *c.*)
10. How far have ethical theories been affected by psychological doctrine, and how far has jurisprudence been affected by ethical theory? (47 *b c*, 53 *e.*)

1890.

LOGIC AND PSYCHOLOGY.

1. 'No reason without language.' 'No language without reason.' Comment critically on these aphorisms. (9, 34 *a* 3.)
2. The origin of concepts. Give a brief account of the chief theories of modern philosophers on this question. (34, 36.)
3. Distinguish Analysis from Synthesis in full detail. Explain the function and the value of each in the

scientific study of phenomena, and the way in which they co-operate in the formation of a scientific theory of any group of phenomena. (17, 23, 33 *d*, 34 *a*.)

4. Distinguish the various kinds of logical inference, and show their relations to one another. (4, 17.)
5. Distinguish hypothesis from theory. Explain the use of hypothesis in scientific procedure. Show, by a concrete example, how far the imagination and how far the reason has entered into the construction of a workable hypothesis. By what criticism would you test all hypotheses? (23, 33 *d*.)
6. Give a detailed definition of the following terms from your own point of view:—Thought (36 *b*), feeling (42), sensation (28), perception (31), judgment (35 *a*), reasoning (35 *c*), proof (22 *c*), verification (23 *c*), evidence (22 *c*).
7. Examine the following:—'Every bird comes from an egg, every egg comes from a bird, therefore every egg comes from an egg.' (13 *c*.)
8. Examine—

   (*α*) 'All responsible beings are rational, responsibility increases with the increase of rationality; some dogs are more rational than some men, therefore some dogs are more responsible than some men.' (15 *c* 1, 22 *e*.)

   (*β*) 'If I am to pass this examination, I shall pass it, whether I answer correctly or not: if I am not to pass it, I shall fail, whether I answer correctly or not: therefore it is of no consequence how I answer the questions.' (14, 45 *c* 3.)

Psychology and Ethics.

[Note.—*Eight questions only to be attempted, of which two at least must be from Group* B.]

A. 1. Explain the terms *Sensation* and *Perception*, and state your view as to the relation between the processes so named. (28, 31.)

2. State and comment on the principles that have been applied in classifying sensations, giving, with reasons, the classification you prefer. (29, 7 *b*.)

3. What circumstances enable us to estimate the duration of events in our experience? (32 *a* 2, 33 *c*, 40 *a*.)

4. Give a brief summary of Berkeley's theory of vision, and discuss the main objections brought against it. (32.)

5. Criticise, from the psychological point of view, the answers that have been offered to the question: What is the object in mind when a general term is used? (34 *b*, 35 *b*, 5 *b*.)

6. Give a careful psychological analysis of belief in testimony. (37 *d*.)

7. What have been called illusions of perception? Select any one of them and explain it in detail. (31 *c*, 41.)

8. To what extent and in what ways is control of emotion possible? (42 *b d*.)

B. 9. Indicate the points in the psychological analysis of Emotion and Action that seem of most significance for ethical theory. (43 *c d*, 45 *a*, 47 *b c*.)

10. Comment on the distinctions that have been drawn (*a*) between what is *absolutely* and what is *relatively good*, (*b*) between *natural good* and *moral good*. In the course of your answer consider the doctrine that pleasure and good are identical. (46 *b*, 48 *b* 2, 50, 51 *a*.)

11. In what relation does Utilitarianism place virtue to happiness? (50 *a* 2, 51 *a* 5, 52 *b* 1.)

12. 'The contrast between the morality which appeals to an external standard, and that which grounds itself on internal conviction, is the contrast of progressive morality against stationary, of reason and argument against the deification of mere opinion and habit.' Consider this passage. (49 *d*, 52 *b* 2 γ.)

APPENDIX B.

LIST OF PRINCIPAL AUTHORITIES.

BAIN,	*Mental and Moral Science.*
CALDERWOOD,	*Handbook of Moral Philosophy.*
DEWEY,	*Psychology.*
FOWLER,	*Deductive Logic.*
„	*Inductive Logic.*
JEVONS,	*Elementary Lessons.*
„	*Principles of Science.*
„	*Studies in Deductive Logic.*
KEYNES,	*Formal Logic.*
LOTZE,	*Logic* (Clarendon Press).
„	*Practical Philosophy* (Ginn).
„	*Psychology* (Ginn).
MARTINEAU,	*Study of Religion.*
„	*Types of Ethical Theory.*
MILL (JAMES),	*Analysis of the Phenomena of the Human Mind.*
MILL (J. S.),	*Examination of Hamilton.*
„	*Logic.*
„	*Utilitarianism.*
MURRAY,	*Psychology.*
SIDGWICK,	*Methods of Ethics.*
SULLY,	*Outlines of Psychology.*